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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

Vol. 92, No. 12 DECEMBER, 1939 Member A.B.C.-A.B.P.

Thanksgiving Day Fire Which Threatened the Center of the Business Section of East Liberty, Penna.

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Safety is first when you buy Manhattan Fire Hose . . . for not one length leaves the factory without showing—in a thorough test under high pressure—the strength and stamina to stand up and deliver water as long as it's needed.

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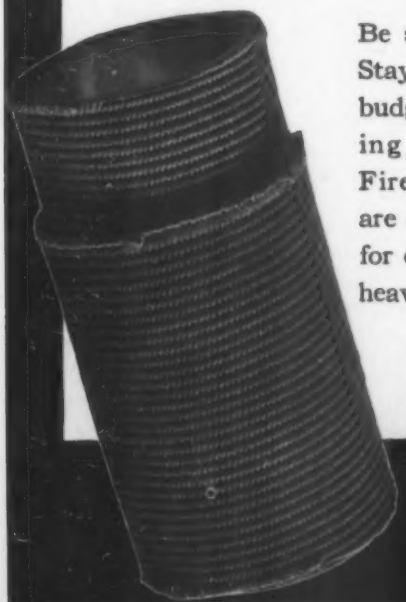

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MACK TACKLES THE TOUGHEST FIRE-FIGHTING JOB OF THEM ALL

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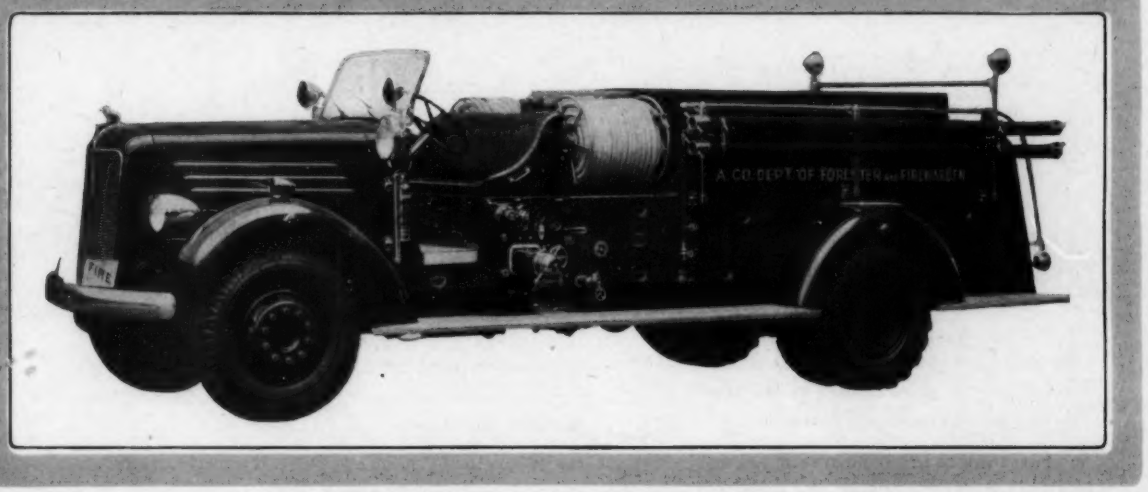

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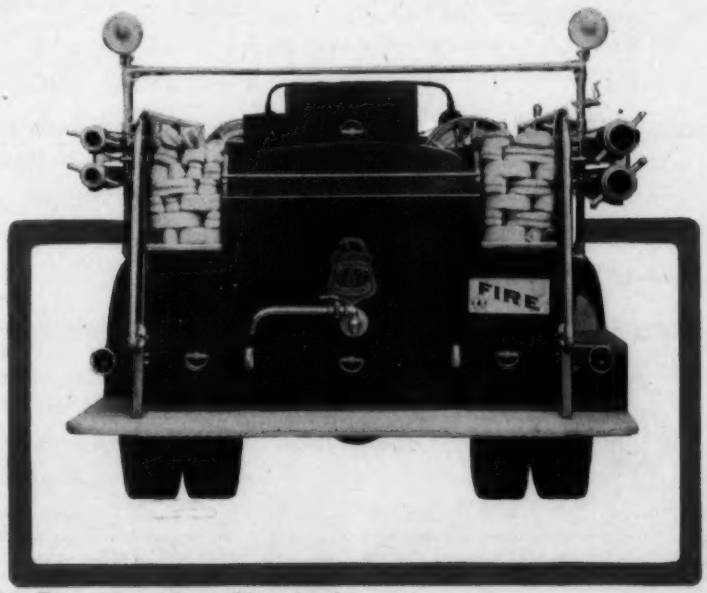

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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

FRED SHEPPERD
Editor
N. N. WOLPERT, Assistant Editor.

Merry Christmas!

YES, that's Santa Claus you hear, scaling down the chimney. You know him well!

● FIRE ENGINEERING pauses at this Christmas time not only to pay tribute to the fine job Santa continues to do in this war-weary world, especially for the little ones; but particularly to do honor to you good-fellows of the fire service who have helped him so much!

● Fire stations in ever-increasing numbers, in every section of the country, are adopting the custom of collecting worn-out and broken toys which they recondition, paint and otherwise prepare for Santa's pack when he makes his rounds to homes of children in the poorer neighborhoods.

● Yes, you have truly won for yourselves a very heartfelt "Merry Christmas"!

The Publishers

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Reserves

THAT COUNT IN FIRE-FIGHTING...

✓ Reserve SPEED
✓ Reserve POWER
✓ Reserve TRACTION
✓ Reserve SAFETY

FWD Model KSU-750 gallon per minute triple combination pumper recently delivered to the City of Sturgeon Bay, Wisconsin. Equipped with a 3-man coupe type cab —has a booster tank with a capacity of 150 gallons. 180 inch wheelbase. 9.75x20 inch tires. 170 hp. motor. Top road speed approximately 70 m. p. h. Carries 200 feet of 1-inch hose, 1000 feet of 2 1/2 inch hose, 61 feet of aluminum ladder.

WHATEVER the emergency calls for, the reserves are there with four-wheel-drive apparatus — reserve speed to gain precious minutes — reserve power to climb a steep grade — reserve traction to get through snow or mud-blocked streets — reserve safety for fast travel on wet, slippery pavements! The two driving axles of the FWD, delivering powered traction to the front as well as the rear wheels, give you ample reserves of all the factors that count in fire-fighting — speed-power-traction-safety. Cities from coast to coast value the plus performance available in FWD apparatus. FWD builds a complete line of fire-trucks — all types, all sizes — with rotary or centrifugal pumpers in triple or quadruple combinations, aerials, etc. Write for literature.

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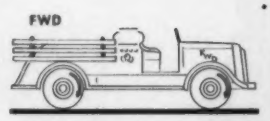
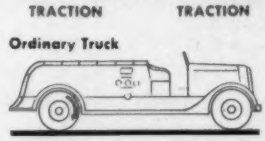
Canadian Factory: Kitchener, Ontario





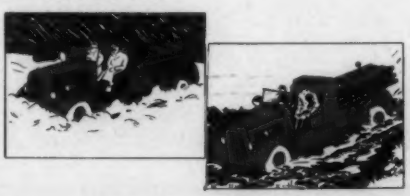
FASTER GET-AWAY—

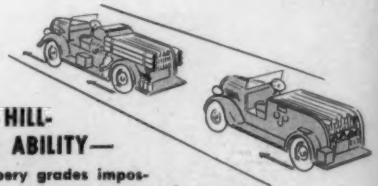
Power on all four wheels makes full use of all the engine power for acceleration—slippery streets that ordinarily would cause wheel spin and delay do not present hazards. All the weight of the truck and its load are converted into powered traction for maximum performance.

FWD

GOES WHERE OTHER VEHICLES FAIL—

Snow or mud-blocked streets —or streets torn up for construction, steep grades and locations ordinarily inaccessible, present no fire hazard with four-wheel-drive.





GREATER HILL-CLIMBING ABILITY—

Steep or slippery grades impossible to other vehicles present no problems for FWD with all four wheels pulling.

GETS TO THE FIRE QUICKER AND SAFER

Adequate Fire Protection

is the most acceptable gift you can provide your community

Three-Fold Fire Alarm Box on Type U1000-6 Pedestal

THE safety, happiness and well-being of any community depends, in a great measure, on the adequacy of its protection against fire hazards.

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Make the Three-Fold Fire Alarm System your city's "first line of defense against Fire!"

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FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 92 DECEMBER, 1939 No. 12

With the Editor

The Way It Should Be Done Some time ago, the City of Alliance, Ohio, reduced its fire department personnel from eighteen to six men. And now the Ohio Inspection Bureau has dropped the city from Class 5 to Class 7, which will mean a marked increase in insurance rates for property owners in that city.

Rating organizations require improved fire defenses to grant a lower basic rate. If fire defenses are weakened, an increase in rates should be quickly applied. It's the only just procedure to be followed.

If more rating offices were consistent when such situations arise, fire departments would be freed of many unwarranted cuts in personnel and equipment.

One Plant That's Busy There's one plant today that is crowded to capacity, and with a big backlog of work standing by for shop-room. It is the fire department repair shop at Philadelphia, Pa. Twenty-five fire trucks are there already hopefully awaiting repair.

Most of the fire apparatus in that city is of such an age that dependable service can no longer be expected of it.

The present deplorable state of equipment in the Philadelphia Fire Department is the direct result of procrastination on the part of former city administrations. For Chief Ross B. Davis has been continually urging the replacement of antiquated equipment, and has kept the city officials apprised of the poor state of repair of the Department's apparatus.

Rather than enter upon a long range apparatus replacement program, which would require but a moderate outlay per year, the city authorities postponed improvements, apparently with the forlorn hope that the city could "get by" until some other less painless method of handling the pressing problem might show up.

The day of reckoning has arrived. Just how the city will get the necessary money to bring the department back to strength, in view of the present financial tight spot in which it finds itself, is yet to be determined.

This much may be said, however: Not only Philadelphia, but many other cities throughout the country, will learn that a long range replacement plan, rigidly adhered to, is the most feasible, the most satisfactory and the least painful, financially, for any municipality to follow.

Fred Oberfell

MAIN LIBRARY FEE

Hazards of Modern Firemanship

Firemen Today Must Know Properties of Many Gases and How to Guard Against Toxic Results

By E. G. MEITER, Ph.D.
Director, Laboratory of Industrial Hygiene
Employers Mutual Liability Company

THERE is no single group of individuals who must meet a wider group of gas hazards than firemen. The situations where these hazards may be encountered by firemen are too numerous to mention, but a few general cases may be cited: Mechanical refrigeration has brought with it certain hazards to life and property because the refrigerants employed are, as a rule, flammable or toxic; warehouses and stores contain many flammable liquids such as naphtha, solvents, paints and lacquers which are readily vaporized to form irrespirable atmospheres and flammable vapor-air mixtures; many manufacturing plants may be found with such compressed gases as ammonia, chlorine and sulfur dioxide; street manholes frequently contain poisonous and flammable fuel gases; and motion-picture theatres and hospitals present a hazard from film storage.

Frequent Calls for First Aid

In addition to these hazards frequently encountered by firemen during their regular line of duty, they are often called to give aid in accidents and emergencies which involve gas hazards; for example rescuing persons from underground tunnels, giving assistance where leakage of refrigerants such as ammonia and sulfur dioxide have taken place, rescuing persons overcome through the use of fumigating gases, and many other similar services.

The fireman of today must know the poisonous and flammable properties of gases and vapors, and be trained in the use of protective equipment. The hazards under discussion can be divided into four subjects which we will take up one by one: Products of combustion, atmospheres deficient in oxygen, refrigerants, and other gases.

Products of Combustion

Carbon dioxide is present in small amounts in normal air, and is produced by fires and by breathing. A man can breathe up to three or four per cent in air with no other effect than a marked increase in depth of breathing. At five per cent, breathing becomes laborous. Excess of ten per cent becomes dangerous to life.

Carbon monoxide is produced in the burning of carbon containing materials such as natural gas, coal, coke, wood, gasoline, explosives, etc., whenever the supply of air or oxygen is not sufficient for complete combustion. It is asphyxiating to breathe because in the lungs it combines chemically with the hemoglobin of the blood, reducing the capacity of the blood for transporting oxygen according to the amount of carbon monoxide absorbed. Four one hundredths of one per cent is about the maximum concentration that can be inhaled for one hour without appreciable effect. Concentrations of 0.1 to 0.15 per cent, if inhaled for an hour, cause unpleasant but not dangerous symptoms, but higher concentrations usually render the victim unconscious without warning. Carbon monoxide has no taste or odor. A person who breathes it may not be aware of its presence until he becomes greatly weakened or nauseated. He may even lose consciousness without receiving any warning. Firemen should, therefore, be equipped with the proper type of respiratory equipment for protection against this gas.

Inhalators Being Used to Revive Firemen Overcome at Warehouse Fire

Atmospheres Deficient in Oxygen

Normal air contains about twenty-one per cent oxygen. When the oxygen is reduced to below seventeen per cent, the flame of a miner's safety lamp is extinguished. This indicates the practical limit beyond which a person should not enter a confined space without the proper respiratory protection. Although a flame is extinguished at about seventeen per cent, a man is not in serious danger until the oxygen falls below, say, fourteen per cent. Atmospheres markedly deficient in oxygen are dangerous because they possess no warning properties and the action is

so rapid that the symptoms of shortness of breath and dizziness are followed in a matter of seconds by collapse and unconsciousness. Such atmospheres should never be entered by firemen unless equipped with the proper respiratory protection devices.

Gases Used in Refrigeration

The two gases most widely used as refrigerants at the present time are ammonia and sulfur dioxide. Both gases are strongly irritating to the eyes and membranes of the nose and throat so that one has ample warning of their presence. These irritant refrigerants are indirectly fire hazards in that their liberation at time of fire would retard fire fighting operations.

Ammonia gas as used in refrigeration machinery, is liquefied under high pressure, and when a break occurs in the confining system, through accident or fire, the ammonia gas escapes. Refrigerating machinery is widely distributed at ice-making plants, breweries, cold-storage plants, hotels, meat and provision stores and elsewhere. When leakage occurs the use of proper type of gas masks enables workers to close valves to stop escape of ammonia or to conduct other operations in the presence of the gas. Ammonia is a powerful irritant upon the mucous membranes of the eyes, nose, throat, and lungs. When leakage of this gas occurs, it is necessary that city Fire Departments have adequate protection against this irritating gas, not only to cope with fires, but also to enter rooms into which the gas is leaking in order to shut off the valves of the container from which the gas is leaking.

Sulfur Dioxide Fumes

There is little danger from sulfur dioxide poisoning because the fumes are so irritating to the eyes and throat that the victim is compelled to seek fresh air at once. Most persons can detect sulphur dioxide in concentrations as little as three to five parts per million of air; 0.05 per cent of sulfur dioxide is acutely pungent and produces a sense of suffocation; concentrations greater than this are dangerous even for a short exposure. In addition to its use as a refrigerent, sulfur dioxide fumes may be encountered in sulfite paper mills, sulfuric acid plants, chemical plants and stores. Most persons can recognize the gas by its odor with which they have become familiar through the use of burning sulfur for fumigation purposes. Firemen should always wear protective devices where the gas is present.

Other Gases

Chlorine was the first poisonous gas used on a large scale in the world war. At ordinary temperatures, chlorine is a greenish-yellow gas. It is handled commercially in the form of liquid in steel cylinders or special tank cars, and used for treating city water to kill bacteria; for treating the water in indoor swimming pools; for bleaching cotton, paper and flour, for use in liquid soap manufacturing, and for manufacturing many other chemicals.

If exposed to fire, a cylinder containing liquid chlorine would very likely blow out a fusible metal plug and release the gas to add to the difficulties of fire-fighters as the suffocating action of the chlorine is intolerable even in very small amounts. The breathing of air containing only 0.004 to 0.006 per cent chlorine for a period of thirty minutes to one hour is dangerous to life. A few deep breaths of air containing 0.1 per cent chlorine is likely to prove fatal. Respiratory protective devices should always be used when dealing with atmospheres where chlorine is present.

Gas for Fumigation

Hydrocyanic acid gas is used in the fumigation of buildings for ridding them of vermin. It may be encountered by firemen either in their regular line of duty while fighting a fire in a building undergoing fumigation, or in the case of an emergency in rescuing persons overcome by the fumigating gas. This gas may be purchased in liquid form in cylinders or it may be generated on the premises from sodium cyanide and sulfuric acid. It is an exceedingly toxic gas and acts very quickly. A concentration as low as 0.01 per cent is dangerous for thirty minutes exposure. A concentration of 0.3 per cent is rapidly fatal. In immediately harmful concentrations, the odor (bitter almonds) is moderate and distinct, but it is not discomforting and is insufficient to prevent serious exposure. The warning odor of low concentrations is also insufficient to prevent harm from extended exposure. The concentration of the gas, therefore, cannot be accurately judged by the sense of smell and gas masks should always be used by firemen in entering a building where the gas is present.

Oxides of nitrogen are given off by the burning of cellulose nitrate x-ray films. Most of us remember the disastrous x-ray film fire occurring in the Cleveland, Ohio, Hospital Clinic in 1929, resulting in the death of about 125 persons, caused by the poisonous gases carbon monoxide and nitrous fumes. Firemen should make periodic inspections to determine that x-ray films are properly stored.

Carbon tetrachloride has come into extensive use as a fire extinguisher for small and incipient fires and is very effective. It is sold under various trade names. There is danger from inhaling the gases formed by carbon tetrachloride when sprayed on heated materials. In addition to the high concentration of carbon tetrachloride fumes formed when this material is used on a fire, decomposition products are also formed which consists of phosgene, chlorine, and hydrochloric acid gas. Death may result by breathing these gases for even a short time. Of course the danger is greatest when the material is sprayed on a fire occurring in a closed or confined space.

Devices for Respiratory Protection

Three types of apparatus are commonly used, gas masks, hose masks, and self-contained oxygen breathing apparatus. The term "gas mask" is used to designate that type of appliance for protecting the respiratory organs, which removes the poisonous gases and fumes from air by means of a chemical filter. This filter is often used in combination with mechanical filters which remove dusts and smokes. A gas mask, cannot, therefore, be used in atmosphere deficient in oxygen. You cannot use a gas mask in an atmosphere carrying less than fourteen per cent oxygen. An oxygen deficiency might exist in unventilated places such as sewers, gasoline or oil tanks, closed vats, caves, old wells and abandoned mines, unventilated basements, before and following fires, and similar places.

In such atmospheres, a hose mask or self-contained oxygen breathing apparatus must be used. Neither does the gas mask afford complete protection against a very high concentration of toxic or irritating gases such as may be found in closed tanks containing volatile liquids, or in small closed rooms where a considerable quantity of gas has been suddenly released.

Limitations of Mask

In general the gas mask is limited to concentrations not to exceed two or three per cent, depending on the kind of gas, the absorbent used, and

(*Continued on page 607*)

HIGHER EDUCATION FOR FIREMEN AT OKLAHOMA A. & M. COLLEGE

Agricultural and Mechanical College Provides a Two-Year Course in Advanced Fireman's Training

By PHIL PERDUE

FIREMANSHIP has become highly technical, and firemen must necessarily be highly trained, so why shouldn't they be trained in colleges and universities as well as are lawyers, doctors, journalists, farmers, teachers and others?

Seeing no reason why they shouldn't, and a good many why they should, Oklahoma A. and M. College included a two-year residence course in firemanship training when it inaugurated a new school of technical training on the campus last year.

It is the only course of its kind in the nation. However, following the lead taken by Oklahoma A. and M., other colleges and universities, a few, have indicated their intention of setting up similar programs.

Full Training Course

Already a $100,000 firemanship training building has been completed on the campus and the program enlarged. There are facilities now to accommodate approximately fifty students. Dormitory space in the new building will house forty students, and any over that number stay in other college dormitories or in Stillwater homes.

The students eat, as well as sleep in the building. Meals cost but $15 a month, and their rooms, gas and electricity are furnished. It is convenient for them to live entirely in the building, and it furthers their training.

Two years of intensive training are given the students who then are awarded a diploma. There is little question but that the "graduates" will step immediately into jobs as firemen.

The program is a combination of theory, practice and experience, all worked together deftly to provide a maximum of efficiency in training in the two years allotted the course.

In the curriculum are courses in English, fire-fighting tactics, industrial algebra, chemistry, engineering drawing, fire causes and hazards, psychology, fire-fighting practices, fire hazards, engineering lectures, military science, advanced mathematics, shopwork, forge and heat treatment of metals, first-aid, combustion engines, oxy-acetylene and electric welding, mechanics and heat, essentials of electricity, fire prevention, fire protection, fire department inspection, elementary hydraulics, physiology, materials of building construction, safety engineering, essentials of public speaking, and others.

The work in firemanship training, because there is no precedent to go by, is being worked out by the instructors in charge of the course.

On a 100-foot training tower, which forms a section of the new building, weekly drills are held in which the tyro firemen learn to work safely and efficiently on ropes and ladders, do rescue work and handle hose and other equipment.

Then, twice weekly, lectures on phases of firemanship are given in the station.

City and College Cooperate

As to experience, that is received through the actual fighting of fires. The station is operated cooperatively between the college and the City of Stillwater. The city furnished the funds to construct the first section of the firemanship training building, and provides four firemen who stay in the station. They act as officers and aid in the supervision of the students.

Stillwater's interest in the program is that of having extended fire protection through the location of a second fire station.

The station answers approximately 100 calls annually and those students who have had at least one semester's training are expected to make the calls that come in when they are in the building. They board the two trucks in the station, both provided by the city, and on a call they work alongside the regular firemen.

If a student is in a class on the campus when the fire alarm comes in, he ignores the call. In cases of two-alarm fires, however, the students are automatically excused from their classes to report for duty; and it might be added, experience.

Early Call for Fire

Shortly after the course was opened last year, the student firemen were afforded an opportunity to get some real experience almost at their backdoor. It was 6 o'clock in the morning, just as the students had donned their bunkers and lined up for roll call, that someone walking down the street noticed that Old Central, the campus' historical old building, was coughing a little smoke and flame through the windows.

Cries of "fire" by the passerby immediately sent the young apprentices into action. Quick work on their part resulted in snuffing out the flames before appreciable damage was done.

The station is run on an orderly, almost military schedule. The boys arise at 6 o'clock, don their clothes and report on the first floor for roll call. Duties are assigned and completed and then breakfast is served. Classes are attended in the mornings and afternoons and then the students are given some "free" time before and after dinner in the evening.

The group is divided into four squads, one squad remaining on duty all night, once every four evenings. The others may spend their time as they please, but studying usually is in order. They must be back in the building by 10:30, however.

Supervision of School

The department of firemanship training, in the technical training school, is a subsidiary of the division of engineering at A. and M. college which is headed by Dean Philip S. Donnell.

In charge of technical training is W. Fred Heisler, and Raymond J. Douglas is head of the Department of Firemanship Training. Fire Chief J. Ray Pence, of the Stillwater department, also cooperates in the training, and supervises the four Stillwater firemen who stay in the building.

Also cooperating in the program somewhat is the state department of trades and industrial education, which holds meetings and short courses in the new building.

The college endeavors to train the firemen in the most modern methods of fire-fighting, life-saving, and fire-prevention, and related fields, and give them a background of theory and practice which will stand them in good stead in the emergencies they will face. In other words, they are being trained to be first-rate firemen.

Muskegon Department Stages Show

During the last Fire Prevention Week, the fire department of Muskegon, Mich., sponsored hose efficiency contests, in which each company in turn had to hook a line to the hydrant, lay 300 feet of hose, put on nozzle and turn on water. The company making the best time received a silver trophy at a dinner held for the department. The winner was Company No. 6 and the time was 19½ seconds. Fire demonstrations were also given during the week.

Chief Chris Smith

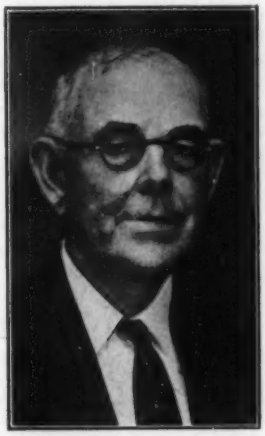
Chief Chris Smith is serving his forty-fourth year in the service. Starting as a call man, Chief Smith has held every rank in the department.

HOW FIRE PREVENTION WORK AFFECTS INSURANCE RATES

Effective Fire Protection and Low Losses Earn Lower Insurance Rates

By P. J. DUNN
State Fire Marshal, Pierre, S. D.

ALL firemen know, and others should be impressed with the knowledge, that fire insurance rates are based primarily on the fire losses over a given period. Credit in rates is based, to a large extent, upon the fire departments, their personnel, the facilities they have for combating fires, as well as the success they have in getting cooperation from the governing body of the community.



P. J. Dunn

A volunteer fire department, to be given credit in computing the basic rate in South Dakota, must be comprised of not less than fifteen adult men, all residents between the ages of eighteen and sixty, living in or near the city. These men must be available at all times. They are supplied with an approved set of by-laws.

Among the factors that have a bearing on the reduction of the insurance rates are: Best possible equipment for the firemen, proper fire protection ordinances, removal of fire hazards or hazardous business from the city limits, and a permit required before any building, or other combustible material, be erected or stored in the city limits.

All firemen's programs should be encouraged, such as the State Fire School, and means provided for sending a delegation to these schools. Many new and modern methods are taught, and the information obtained by the delegates can be brought home and explained to the others who were unable to attend.

Firemen should sponsor Fire Prevention programs during Fire Prevention Week which includes the day of October 9, the date of the great Chicago Fire in 1871. Any serious fire hazards that have been neglected in cities, towns and country should be reported to the Fire Marshal, so that steps might be taken to correct the conditions.

As a result of fire, fourteen people lost their lives in South Dakota during the past year, which was four less than the preceding year. The property loss was $593,303.58, which was over $100,000 less than the preceding year. Even these figures are much too great, and it is hoped that a better showing can be made next year. According to statistics, South Dakota was second in the United States for Fire Prevention activities in 1938, which is a splendid accomplishment.

War Against Carelessness

Fire prevention may be defined as a perpetual war against human carelessness, and every individual should combat fire waste with all the means he can command. Many towns in South Dakota are fortunate in having men for Chiefs of their volunteer fire departments who are leaders, organizers and diplomats. Towns having Chiefs of the above type are favored with the lowest basic insurance rates. A number of the other villages were able to meet the requirements of the Fire Underwriters Inspection Bureau by eleminating fire hazards and supplying the necessary water systems, fire equipment, and fire prevention ordinances.

There have been frequent inquiries as to how present insurance rates can be lowered. One answer is that a vigorous fire prevention program should be followed. Work should be carried on similar to the splendid work many towns are doing by electing competent men for Chiefs, men who will make frequent inspections of their respective cities, cooperate with city officials to keep the fire losses to a minimum, and follow recommendations until all hazards are removed.

Reports from a number of towns and cities show much time and effort were extended in Fire Prevention work, during Fire Prevention Week. The combined efforts of the Department of the South Dakota Fire Prevention Association, schools, churches, and civic organizations have all helped in this great work; they have cooperated more this year than ever before, according to the Fire Marshal's records. Such efforts as made here will be rewarded.

Blaze Destroys Airport Hangar

A hanger and nineteen planes were destroyed by a fire which raged through the municipal airport at Des Moines, Ia., recently. The fire was believed to have been started by sparks from welding apparatus dropping on one of the planes. The blaze was fed by bursting gasoline tanks, causing it to gain much headway before the department arrived. Three alarms were sent in.

Despite the complaint of insufficient water pressure, the blaze was under control within an hour. Offices of the Iowa Airplane Company at the southwest corner of the building were damaged somewhat by smoke and water. It is estimated that $106,000 worth of damage was done before the fire was totally extinguished. A number of other planes outside the hangar were far enough away to escape damage.

The Aftermath of Too Much Fire Water

Remarkable as it may seem, the drivers of the truck and car involved in this accident at Los Angeles, Cal., escaped injury. An 8,000-gallon gasoline truck was overturned by the impact of an automobile driven by a man who was later booked on a charge of driving while intoxicated. A spark from the ignition started the gasoline fire. The intense heat set fire to trees and poles in the vicinity.

CROOM CALCULATOR ON PUMPER SIMPLIFIES PRESSURE CALCULATIONS

Indicator is Designed for the Three Most Common Nozzle Sizes—Examples of its Appiication Described

THE Croom Master Gage and Indicator, designed and patented by J. Luddie Croom, Chief of the Wilmington, N. C., Fire Department, is a simple pressure indicator for use by fire department pumper operators. It is so arranged that at a glance the operator can determine the necessary pressure to be carried at the pumper to maintain the proper pressure for various sized nozzles and various lengths of hose.

Arranged for Common Nozzles

The indicator is arranged for use with the three most generally used nozzle sizes, 1-inch, 1⅛-inch and 1¼-inch. The four bands or circles are for pressure in pounds per square inch, and for the three size nozzles. Other and larger size nozzle bands could be added if needed. The outer band is calibrated as an ordinary pressure gage. The first inner band is calibrated for a 1-inch nozzle, the next for a 1⅛-inch nozzle, while the innermost band is for the 1¼-inch nozzle. The three inner bands are marked in hundreds of feet of hose used in strecth-in, indicating on the circle opposite, the various lengths of hose lines, the necessary pressure to be held on the pumper to give the generally used nozzle pressure. In the case illustrated, on page 195 of the May issue, the calibrations are for 45 pounds pressure on one-inch nozzle and 50 pounds pressure on other two size nozzles.

In use the only information necessary for the pumper operator is the length of stretch-in and the size of nozzle. With this information at hand the operator selects the proper band of indices and reads opposite the hose length the necessary pressure for his pumper. For instance, a 1¼-inch nozzle with a 500-foot stretch-in will require 178 pounds at the pumper. The operator does not have to make a calculation nor turn a dial. He simply finds the hose length in the proper band, opposite which, in the pressure band, is the required pressure. In fact the outer band could be removed entirely and the pressure indicating hand set over the indice indicating the length of stretch-in. In case there are two or more lines of hose from one pumper, the operator selects the one requiring the greater pressure and sets his indicating needle to this pressure. Though the shorter lines will give a greater pressure, the longer line will have the standard pressure at the nozzle.

Elevation Correction

There is a correction for elevation. The operator determines the pressure necessary for hose length and nozzle size, and adds five pounds for each story of building. With a stretch-in of one thousand feet of hose, and a 1⅛-inch nozzle used on the fourth floor of the building (the building and hydrant being approximately at same elevation) the operator finds the indice ten on the 1⅛-inch band, reads his pressure in the outer band, which in this case will be 222 pounds, then adds the necessary fifteen pounds for elevation of nozzle above pumper. This makes the pumper pressure required 237 pounds.

In the illustration used there is a permanent indicator to ze used as standard booster hose pressure, in this case 80 pounds, as it is standard for ¾-inch booster hose. Of course a greater or lesser pressure can be used for booster hose than indicated, if it is so desired.

In the use of the gauge, it is not necessary for the operator to know anything but the length of stretch-in, the size of nozzle and the elevation above pumper level, if any. The gauge and indicator are integral and always ready for use unless the gauge is removed from the pumper.

Water Curtain for Transformers

Among the interesting and unusual pieces of machinery at Boulder Dam are the transformers, which step up the 16.5 kv. primary voltage to 287 k.v. for transmission over hundreds of miles of cable. Physically, these units are the largest in the world, and operate at the highest voltage ever used commercially. Each one is 32 feet in height, and weighs 385,000 pounds, 150,000 pounds of which is accounted for by the transformer oil which they contain.

In design they are of the circular-coil, non-resonating type, and a shielded high voltage winding is used. A water curtain for fire protection has been provided. These units were built by General Electric Company especially for installation at Boulder Dam, and constitute examples of the pioneering work that has been necessary in this field.

Lightning arrestors for the switching stations and switchyards present an unusual appearance. The central columns are composed of 287 kv Thyrite arrestors, supported further by three strings of insulators around the outside. The bottom of the assembly is secured to the base through a spring attachment that serves to prevent swaying. Electrostatic stresses are distributed over the entire length of the arrestors by means of circuit shields which present the appearance of lamp shade frames.

C. W. GEIGER

Fairfield County Plan Meets

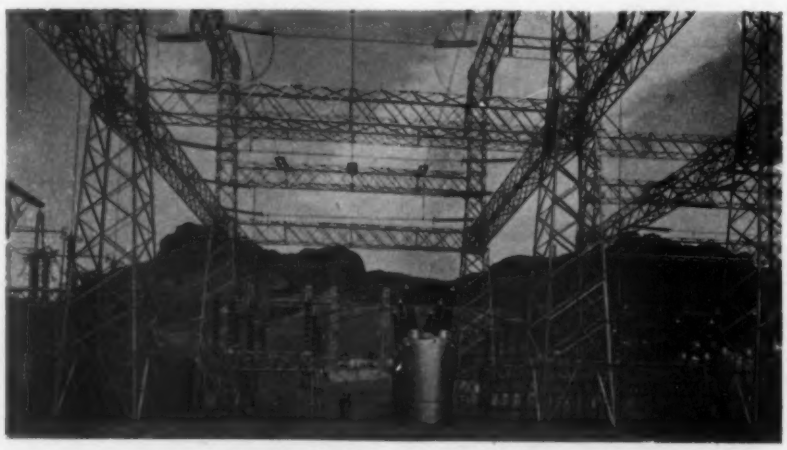
Taking an initial step in making plans for any future emergency on the newly completed Merritt Highway now open for its full thirty-six miles from the Greenwich connection with the Hutchinson River Parkway to its end at Nichols, the Fairfield County Fire Chiefs' Emergency Plan, meeting at Brookfield, Conn., on Wednesday evening, November 22, began to collect data which will be given to the state police.

A card will be printed with the telephone number of the nearest available Fire Department and placed at each telephone on the parkway. Although the telephones are now locked, the Plan hopes that in the future the state police will install public telephones. At the present time, only state troopers may use the phones.

Speakers at the meeting were the Hon. Senator Thornhill of Brookfield, who welcomed the firemen to Brookfield, Chief Leon Stapelberg of Brookfield, Chief C. J. Carrigan, President of the Connecticut State Firemen's Association, Chief Lynn Deming, President of the Litchfield County Fire Chiefs' Emergency Plan, J. Russell Clark of the LaFrance Company of Brookfield, Chief Stuart Potter of Greenwich, Retired Chief Peter Beckerle of Danbury, and Retired Chief Frank Gisborne of Old Greenwich.

Chief Potter of Greenwich discussed the use of the Booster Tanks for extinguishing fires in the country districts where no hydrants are available and cited instances where houses worth upwards of $25,000 have been saved by this modern bucket brigade. He urged the chiefs and officers never to stop trying—that sometimes the blaze looks as if it will only leave the foundation, but

(*Continued on page 607*)



Protection for Boulder Dam Transformers

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

EQUIPMENT FOR FIGHTING BRUSH FIRES

IN line with the trite but true expression that any job could be done better with the proper tools, brush fires may be fought more efficiently and effectively if the necessary equipment is available.

Brush fires, in most cases, are located away from sources of water supply and often on land not very accessible to fire apparatus. For hilly and rough terrain, portable knapsack type equipment is necessary; for flat land, the apparatus with a filled water tank is best.

In this issue is presented a discussion on the questions contained in the box on this page. So many replies were received that the discussion will be concluded in the next issue.

Discussion of the Question

P. E. DuPaul, Chief, Vancouver, Wash.: Each of our four trucks is equipped with a booster tank and 150 feet of hose. During the dry season we add about 100 feet of booster hose to the two trucks that answer alarms for grass and brush fires. Each truck also carries a five-gallon pump can. We handle most of our grass and brush fires with this equipment. The city Street Department has a 1,100-gallon street flusher with pump and connection for 1½-inch hose which we use in case of a large brush fire.

Last year we answered fifty-eight alarms for grass and brush fires and extinguished them with the above equipment.

V. E. Bouchillon, Chief, Covington, Ga.: We do not have a large number of brush fires. We fight these fires with the booster system, fast foam, soda and acid, as our department is not equipped with the knapsack type or portable pump tank. We do find that our equipment is satisfactory for this type of fire fighting.

J. E. Held, Chief, Alliance, O.: We have a pick-up truck equipped with shovels, brooms and knapsack type of pump for fighting brush and grass fires. We have found the knapsack portable pump very effective in fighting this type of fire. We have no portable pressure pumps other than our regular fire apparatus.

R. F. Tomlinson, Chief, Thomasville, N. C.: As our population is somewhat scattered, there are open spaces where grass and brush fires might occur. We use the knapsack type of portable pump tank and also have two trucks equipped with booster pump and tank which carry around 100 gallons of water each.

The knapsack type of pump has proven very effective on ordinary grass and field fires, probably due to our being able to get water on the fire at locations inaccessible to regular fire apparatus.

L. R. Morris, Chief, Ames, Ia.: The booster tank and knapsack pump have proven very satisfactory on brush and grass fires. We have even used our knapsack pump on small fires in attics and also on trash fires.

Fred Guevremont, Chief, Bristol, R. I.: For fighting brush and grass fires, we use round rattan brooms and five-gallon Indian pumps. On good size brush or grass fires my men work about ten feet apart, covering as much space as possible. Some times we set back fires to stop the progress of such a fire. We have had very fine results with these methods.

Alex Olson, Chief, Ironwood, Mich.: The portable pumps have proven effective on brush fires. In northern Michigan, Minnesota and Wisconsin we have lakes and rivers so plenty of water is available. On grass fires we use brooms.

H. J. Callahan, Chief, Fort Dodge, Ia.: We have very little brush here, but we do have grass fires. On this type of fire we use a paddle made by taking short pieces of old hose and splitting it and attaching it to wooden handles. We use these to beat out the fire.

We try to let these fires burn out if there is no property in danger. Quite frequently we go out in calm weather and burn off large unbroken areas of dry grass that would be dangerous if it caught fire during a high wind. We keep equipment standing by during this operation to extinguish the fire in the event the wind comes up or the fire gets too close to property. Our methods have proven effective.

We do not use any equipment other than the regular booster tanks.

Frank P. Walsh, Chief, Hackensack, N. J.: We use fire brooms on brush fires and if the conditions demand it, we use the booster tank. We also backfire all grass fires to provide a fire-break.

We do not have any knapsack pumps, but I heartily approve of them for grass fires.

Due to the fact that we are located in the metropolitan area and do not have any heavily wooded areas, it is not necessary to have a portable pump.

George Van Zant, Chief, New Castle, Ind.: Our booster hose lines are equipped with combination fog nozzles and we have found that a spray from these nozzles is very effective on grass and brush fires. At the same time they conserve water, making a 100-gallon tank last about twice as long as it would with an ordinary nozzle.

We have no portable pumps or knapsack tanks.

C. N. Lavery, Chief, Burlington, Vt.: We use at present 2½-gallon soda and acid extinguishers, brooms, shovels and water lines when water is available. Sometimes we use two engines and while one is using the booster supply, the other is being refilled.

When funds permit, we intend to buy and use portable hand pumps and also to carry a portable pump with 1½-inch and ¾-inch hose. From past experience I have found that a portable pump can be moved around quickly and get ahead of the fire. We find that when there is a wind to be considered and there is brush of any quantity, that it is necessary to get some distance ahead of the blaze. That is why a portable pump and this size of hose, in our estimation, is in one way the answer to brush fire fighting.

We have here a plot of ground about four miles square and known as the "Intervale" which burns over every year. It is not uncommon for the firemen to be in water up to their knees and a roaring fire going on from six to ten feet in the air. You may readily see that we have had quite a chance to figure out a way to fight brush fires. We are also called quite frequently to outlying districts to help fight grass, wood, and brush fires. I can readily see why it is necessary

HERE IS THE PROBLEM

What equipment and methods do you use for fighting brush fires? Have they proven effective?

Do you use the knapsack type or portable pump tank, and, if so, with what results?

Do you use portable pumps for providing pressure at locations inaccessible to regular fire apparatus? Have they proven effective?

to have some type of extinguisher to cool these areas.

J. R. Sorsby, Chief, Rocky Mount, N. C.: We find that a light booster line (¾-inch nozzle) from the pumper takes less men and effort than beating out grass and brush fires. Beyond reach of the water lines we use back tanks, refilling from the booster tanks. We find this method very effective.

A. M. Jaeger, Chief, Ecorse, Mich.: We do not have any brush fires to contend with as there are no wooded or brush sections within the limits of this city. There are, however, a few grass fires on which brooms are used to extinguish them.

John Ely, Chief, Champaign, Ill.: For brush and grass fires we use the booster lines equipped with fog nozzles, and also the 2½-gallon portable pump. We also use gunny sacks which we keep soaked with water. We also carry shovels. We have fine success.

B. E. Brodnax, Chief, Seminole, Okla.: Fortunately we have very few brush fires and these have been held under control by pump tanks and booster lines from one of our small trucks. So far they have been very successful. We use some knapsack pump tanks, and in fighting grass fires that cover much territory, find them to be very useful as they are carried about so easily, leaving the hands free.

H. G. Putnam, Chief, Winona, Minn.: As we do not go outside of our city to fight brush fires, we do not carry the knapsack type of portable pumps. We do carry portable pumps on all of our apparatus with about forty feet of ¾-inch hose attached. These are used at almost every fire.

T. M. Cook, Jr., Chief, Valdosta, Ga.: We use the knapsack portable tank and long handle flaps made with wide pieces of discarded rubber machinery belting attached to an eight or ten-foot pole.

This equipment has proven very effective for brush fires. One man leads with a knapsack pump and another follows with our home-made flap. These flaps cost nothing and will last a long time. This flap idea was brought to us from the C. C. C. who have had so many brush fires to combat. I would not give up either one of these tools.

We do not have a portable pressure pump. I wish we had one as I believe it is ideal equipment for brush fires that are too hot to handle with knapsack pumps and flaps.

William Briggs, Ex-Chief, Shelbyville, Ind.: We use a 400-gallon pump on a 1½-ton truck with a 100-gallon tank and 200 feet of one-inch hose. We drive into the field where the fire is and go to work. We keep our tank full of water with the use of five gallon milk cans which ninety per cent of our farmers have on hand. We have had very fine results from this method.

J. R. Pyle, Chief, Kingsport, Tenn.: For fighting brush fires, we use heavy brooms covered with a piece of old leather belting. This makes a broom that lasts longer than anything we have ever tried. We also use our booster for grass fires near buildings. We have a small truck equipped with a pump that we use on grass and auto fires.

Our city has an ordinance that requires owners of vacant lots to keep them cleared. The lots are mowed twice each summer, and grass or hay raked and gathered up. Last year we had only four small grass fires.

Robert Meddis, Chief, Hempstead, N. Y.: We use a truck equipped with a 175-gallon booster tank. This truck also carries 500 feet of 1½-inch hose, two Indian tanks, reed brooms, shovels, etc. This equipment is usually enough to cope with our brush fires.

We use our Indian tanks with very fine results. We also have three extra ones for use in our busy season.

John Peguese, Chief, Bridgeton, N. J.: We use Indian pumps, shovels and rattan brooms and find them very effective in fighting grass and brush fires.

In large brush fires where it is impossible to take a pumper, we usually take our tank truck which holds 550 gallons of water to refill our Indian pumps.

J. H. Clift, Chief, Leavenworth, Kans.: Our department uses booster pumps on grass and dump fires. At times we have used damp sacks and have found them very handy. We do not have the knapsack type of portable pump-tank.

J. Ray Roe, Chief, Abeline, Tex.: We use portable pump-tanks, the kind that are carried on the back. These are very efficient in handling small grass fires, especially where the ground is very rugged.

We also have what we are pleased to call a "Booster Unit" (a 150-gallon tank on a light machine, capable of traveling where heavier equipment cannot be placed). These machines can handle fires involving heavy underbrush and sizeable timber. Each machine is equipped with a 200 gpm pump. These machines carry 200 feet of red line equipped with vapor nozzles.

We have portable pumps for providing pressure at locations inaccessible to regular fire apparatus. These pumps are made by a well known manufacturing house that makes both pumps and lighting units.

Our "Booster Unit" responds on all types of alarms of fire, and the first alarm assignment has two such units in addition to the regular equipment. We find that these machines will handle or hold the fire until heavy streams are available. These machines are of great value in rural areas.

J. J. Powell, Chief, Griffen, Ga.: We have a Ford equipped with a 350-gallon Barton pump, a 100-gallon booster tank, 200 feet of one-inch booster hose and 300 feet of 2½-inch hose. This truck with two men answers all calls for grass, automobile, wood and brush fires. It has answered fifty-two calls this year and has proven very satisfactory.

W. J. Gates, Chief, Glens Falls, N. Y.: We use booster lines for fighting brush fires whenever it is convenient to do so. The booster lines have proven to be very effective. We also use the knapsack type of portable pump-tank, where the brush fires are inaccessible to regular fire apparatus.

We use brooms and shovels with these hand pumps whenever the nature of the fire requires their use. We have also found this type of portable pump-tank effective on the smaller brush fires.

This department does not have any other type of portable pumps.

H. W. Bryson, Chief, Wenatchee, Wash.: The equipment we use for fighting brush and grass fires is a small truck equipped with 150-gallon booster pump, 200 feet of chemical hose, 600 feet of 2½-inch hose, 200 feet of 1½-inch hose and a 500-gallon pump tank.

We have used this piece of equipment for a number of years, and have found it to be very suitable for the type of fire that occurs within our city, as the truck can be moved over vacant lots to a point where the hose and nozzle can be used.

The nearest fire hydrant is used as a source of water supply. We have been considering replacing the present tank with a larger one that has at least 200-gallon capacity in order to eliminate frequent trips for refills and at the same time speed up fire fighting.

We have had fine results with the portable pump-tanks especially on small fires and for spot fires that are left burning in heavier materials after the fire has been controlled.

Joe Dolecek, Chief, Atchison, Kan.: We built a truck for the purpose of fighting grass and brush fires. We have a 300-gallon water tank mounted with a 500-gallon centrifugal pump, 200 feet of ¾-inch hose, 200 feet of 1½-inch hose with ½-inch nozzles. We also carry 2½-gallon soda and acid extinguishers with about eight feet of hose on them which we have converted into pump type water extinguishers that we can carry or set down. These little extinguishers prove very effective.

* * *

FOR THE NEXT ISSUE

Due to the large number of replies received, this discussion will be concluded in the next issue.

Answers to Previous Questions

The following reply is in answer to a previous question on the selection of a Chief for volunteer fire departments:

H. L. Sindle, Chief, Little Falls, N. J.: In our town of Little Falls, N. J., the chief is elected each year by a secret vote of all members of the department. There is no question as to this being the proper way to select the chief officer. The men usually stop to consider the man they are voting for, as to his fire-fighting ability, popularity, and above all, his common sense.

In my opinion, there is but one fault with this method of electing a chief. That is that the chief should be elected for a period of from three to five years. This gives him an opportunity to do things he might have in mind. He might be a good man, but might step on someone's toes, and then be voted out of office at the next election.

We have here a membership of four companies, with a total of eighty-eight

men. It is an impossibility to please each man, yet we have very fine harmony in our department.

The following replies are in answer to a previous question on leakage of gasoline from underground tanks:

William J. Sudeith, Chief, St. Paul, Minn.: On several occasions we have found evidence of gasoline from underground tanks seeping into the basements of nearby buildings.

Before any tanks can be used for gasoline storage, application must first be made to this office. Upon receipt of this application, an inspector from this Department investigates the location in order to determine what effect gasoline storage might have upon the immediate premises and adjacent properties. If this department approves the location for the storage tanks, other inspections are then made, at the time of installation, to determine if the tank is placed at the proper depth in the ground and the proper distance from any basements or pits; also if the tanks have the proper sized vents and that such vents are placed in proper position in relation to any building openings, chimneys, sources of flame, etc. All such storage tanks must be of the approved type and thickness for the capacity and must bear the Underwriters label.

Where gasoline was found leaking from underground tanks and where we could not immediately locate the source of the leak, we ordered that test be made on all known underground gasoline storage tanks in that vicinity. Our fire prevention laws give us the authority to order that such tests be made. These tests are made at the expense of the owners of the storage tanks. This department has no equipment for making such tests.

After the tank is installed, this department has no regular periods in which such tests are made and, heretofore, it has only been upon the encountering of difficulties that such tests have been made. In every instance the leaky tank has been found by this department.

George E. Jacob, Chief, Canton, O.: We have had two cases where gasoline has seeped through the ground into neighboring buildings. The first was at a filling station. The tank developed a leak and the gasoline seeped into the basement of the filling station. The fumes exploded and blew out several sections of the walls. The tank was replaced.

The other case was caused by gasoline spilled while the tank was being filled from a truck. About fifty gallons were spilled. The gasoline seeped into an underground cold air shaft leading to a hot air furnace of a residence about forty feet away. The occupants complained of fumes in the house. The cold air duct was thoroughly ventilated and cement plaster put on the brick duct. There was no further trouble.

At the present time, tests are being made by some oil companies. When the necessary equipment is obtained, we expect to inspect gasoline tanks at least once a year.

The following replies were received in answer to a previous question on the use of fog nozzles for fighting fires:

W. P. Payne, Chief, Spokane, Wash.: We have a fog nozzle in every hose company. In certain companies we carry more than one and expect to purchase more in the near future.

We find them effective on all types of fires, but grease flues and oil fires are the specialty of the fog nozzle. We use them with great success for the dissipation of poisonous fumes and in heavily charged smoky basements.

They are particularly effective in gasoline, oil and very hot fires, where the back spray on the nozzle does its job with perfect efficiency.

The results have been very satisfactory as a greater protective measure to the nozzle-men and is a very effective means of fighting attic and cellar fires. We also supply them for the booster hose nozzles, both large and small. We have not standardized on any particular make or brand, but instead are using several makes at the present.

Joseph L. Murphy, Chief, Kingston, N. Y.: We have two fog nozzles in the department. They could be used effectively on oil, auto, hot cellar fires to drive away the hot gas and smoke. In fact, they may be used on most any type of fire at close range for cooling a large area quickly.

I have had but one occasion to use the fog nozzle on a fire and that was on a large bus. The nozzle worked very effectively.

Henry Quane, Chief, Anaconda, Mont.: We do not use the straight fog nozzle, but we do use the spray or mist nozzles. We have three sizes, 2½ 1½ and the ¾-inch for the booster lines. These nozzles are used on the booster lines at all times. We also reduce the booster lines by using a wye, to two 50-foot lengths of garden hose. It is surprising what a mist you can get from an ordinary garden hose nozzle at 120 pounds pump pressure.

Our other sizes are used by removing the tips from the different size nozzles.

We have had wonderful results from these nozzles on all inside fires, so much so that we have not had a water damage for some time.

Henry P. Scholl, Chief, Michigan City, Ind.: We use fog nozzles on basement and attic fires. The fog forces the smoke out, and the vapor when mixed with the smoke, helps to extinguish a lot of fire. It can also be used in covering men on the hose line in the path of the fires and to ward off intense heat.

Brooks McClure, Chief, Huntington, West Va.: We have two Akron Brass fog nozzles which we use for automobile and gasoline fires.

The nozzles have been in the department for the past year, but to date, we have not had the right kind of fires to give them a fair trial. We have tried them out on tubs of gasoline in our drill work and they were effective at that time.

S. J. Flores, Chief, Shreveport, La.: We have used fog nozzles on small oil fires with very fine results.

Donald J. Rayburn, Chief, El Dorado, Kans.: We have used fog nozzles on fires in volatile fluids. We have not had any large gasoline, oil or naphtha fires since the fog nozzles were put into use.

L. B. Hill, Chief, Bessemer, Ala.: We have used fog nozzles on fires in tar pits with satisfactory results.

Charles E. Swanson, Chief, Everett, Wash.: We use fog nozzles on fires in roofs, attics and numerous other types of small fires where we strive to keep the water loss at a minimum. Results have been very fine.

Arthur A. Griswold, Chief, East Providence, R. I.: We tried out fog nozzles on fair size oil fires about four years ago without satisfactory results, in my opinion.

Harry Hutton, Chief, Salem, Ore.: We have used fog nozzles on inside fires and on gas and oil fires with very fine results.

John Gilday, Chief, Hoboken, N. J.: We don't have fog nozzles, but we use spray nozzles on oil fires to good advantage so far.

L. L. Geisler, Chief, Johnson City, Tenn.: We use fog nozzles on oil and basement fires with very good results. They are effective in basement fires in driving out smoke.

Francis W. Donnelly, Chief, Lincoln, Neb.: We do not have fog nozzles in our department at present, but have in mind such a purchase as soon as funds are available.

T. J. Hardwick, Chief, Kansas City, Mo.: At the present time, we are not using fog nozzles but have it under consideration and expect to act upon it in the near future.

Edward A. McHugh, Chief, Louisville, Ky.: I have seen several fog nozzle demonstrations and I cannot see their practical worth to any fire department. Under favorable conditions they might be very effective, but as we must operate under any and all conditions, I still believe that the heavy stiff water stream is the most effective.

For oil fires, I believe foam the only practical method.

Chiefs W. L. Ryan, Dubuque, Ia.; Leo J. Urbanski, Saint Joseph, Mo.; Zephrin F. Drouin, Lewiston, Me.; F. E. Campion, Fargo, N. D.; Luther P. Willis, Pueblo, Col.; E. V. Donovan, Greenville, Miss.; and Thomas F. Burns, Bridgeport, Conn., report that they do not use fog nozzles in their departments.

Insurance Rates Increased

The City of Alliance, Ohio, was informed that insurance rates in the city will be increased. This announcement was made by the Ohio Inspection Bureau. The reason for the increase is that there has been a decrease in the fire department personnel. The bureau says that this gives the city inadequate protective facilities.

Warrants Issued in Philadelphia, Pa.

Warrants have been issued for the arrest of apartment and rooming-house owners who have failed to comply with the Fire Marshal's orders for the installation of fire prevention and safety appliances. This latest move has been taken in Philadelphia in order to prevent a recurrence of past tragedies. A $100 fine is promised those who do not comply with the orders. Particular attention is being focused on the non-fireproof buildings in which workers are employed on the upper floors.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Finding Engine Pressure

To the Editor:

Bulletin No. 50, sent out by the National Board, shows the engine pressure that should be used for 2½-inch hose for effective streams by using the following table:

To 50 pounds add:

Four pounds per 100 feet of hose for ¾-inch nozzle.

Eight pounds per 100 feet of hose for ⅞-inch nozzle.

In a test we had 1,000 feet of hose out with a wye, then 100 feet on each side, with a ¾-inch tip on one and a ⅞-inch tip on the other.

We used the above table as for 1,100 feet of single line, but, of course, we did not have the streams we wanted, as far as reach was concerned.

Using the foregoing set-up (which is usual around here, due to our lays), what should be added to the pump pressure from the table given, to get suitable streams using a ¾ and ⅞-tip, and also for two ⅞-inch tips, as well as for two ¾-inch tips?

H. F. D.

Answer: Where 100-foot leads of 2½-inch hose are used (parallel lines) employing ¾ and ⅞-inch nozzles, add 17 pounds per 100 feet to the 50 pounds.

With the same layout where two ⅞-inch nozzles are used, add 25 pounds per 100 feet.

If two ¾-inch nozzles are employed, add 14 pounds per 100 feet.

Nozzle Pressure

To the Editor:

What is the nozzle pressure in a line of 2½-inch hose, 400 feet long, connected to a line of 1½-inch hose, 100 feet long with a ½-inch nozzle? The pump pressure is 100 pounds.

A. R.

Answer: The first step is to change the layout to a single line of 2½-inch hose. The factor for changing 1½-inch hose to 2½-inch is .074.

100 feet of 2½-inch hose is therefore equal to 100 ÷ .074, or 1351 feet of 2½-inch hose.

Add to this the 400 feet of 2½-inch hose in the line and we get a total of 1751 feet of 2½-inch hose.

Hence the layout is equivalent to 1751 feet of 2½-inch hose supplied by a pumper operating at 100 pounds pressure; ½-inch nozzle being employed.

N. P. = E. P. ÷ (1.1 + KL)

E. P. = 100 pounds.

K for 2½-inch hose and ½-inch nozzle is .00625.

L = 1751 ÷ 50, or 35 pounds approximately.

Then N. P. = 100 ÷ (1.1 + 35 × .00625)

= 100 ÷ (1.1 + .21875)

= 100 ÷ 1.31875

= 76 pounds approximately.

Pressure Ratio

To the Editor:

What is meant by "Pressure increases as to the square of the impeller speed", which phrase is used in connection with the operation of centrifugal pumps? This phrase is also worded "Pressure is directly proportional to the square of the speed."

G. P.

Answer: The statement is correct that the "Pressure is directly proportional to the square of the speed."

For example, if a pump is turning over at 750 rpm and the discharge pressure is 100 pounds, the discharge pressure will be 400 pounds if the pump turns over and 1500 rpm. Note that the pump speed has been doubled, but the pressure has been quadrupled.

Note also that the square of two (the pump speed doubled) is four; thus, the pump pressure varies as the square of the pumping speed.

Should the speed be increased three times, then the pump pressure would be three times three or nine times as much as it originally was; likewise, if the pump speed were increased four times, the pump pressure would be four times four or sixteen times as much as it originally was.

Thus, the pressure is directly proportional to the square of the speed.

Pump Pressure

To the Editor:

Does the formula R. P. × R. D. ÷ G. P. = Discharge, apply when working at pressures below the rated pressure of a pumper? In other words, when using a first size pumper at say 120 pounds pressure, the gallons discharge according to the above formula will be in the neighborhood of 1300 g. p. m.

Is this formula applicable for discharge at pressures below the rated pressure of an engine? If not, what is the formula, if any, to determine the discharge at pressures below the rated pressure of an engine?

If you increase the pressure on an engine above the rated pressure, do you get a decreased discharge? If you use pressures below the rated pressure do you get an increased discharge?

F. M. E.

Answer: The formula you give is the one used for calculating discharge from an engine at capacity pressure.

Where a centrifugal pump is being employed, the formula holds fairly well for pressures below rated pressure up to the speed of safe operation of the engine.

It will be appreciated that at lower pressures, the engine turns over faster and there is a definite limit to the maximum speed of a motor.

Otherwise, the discharge increases as the discharge pressure decreases.

Likewise, when the discharge pressure is increased, the discharge drops.

It all depends upon the power of the motor. If a motor has a certain definite power, this power can be used at higher or lower rates of discharge, and vice versa, at lower and higher discharge pressures.

With piston and rotary pumps, the formula is not accurate for pressures below rated discharge pressure.

Hose Suction

To the Editor:

Does the size of the suction hose used affect the distance a pump can draft water? In other words, could you draft water from the same depth using a 5-inch hard suction as you could with a 1½-inch hard suction?

F. B. B.

Answer: Water can be drafted the same height through different sizes of suction, if suitable engines are used in connection with each suction line. Of course, a larger quantity can be drawn through the larger diameter suction hose.

Where the same size pumper is being used in each case, priming can be accomplished quicker with the smaller diameter suction.

Engine Pressure

To the Editor:

How would you figure engine pressure on three lines, 300, 400 and 500 feet in length, from a 1,000-gallon pumper? The nozzle pressure is 50 pounds on each line and there is a 1⅛-inch tip on each line. H. B.

Answer: No diameter of hose is given, so that we will assume that all three lines are of 2½-inch diameter.

If the hose is all alike, that is, has the same friction characteristics, same diameter, then the 300 and 400-foot lines

must be throttled at the engine to give 50 pounds to the nozzle. Or if stated in another way, you would have to have three different pressures at the engine to give 50 pounds at the nozzles of three lines of different lengths, the nozzles being equal in diameter.

If we assume that the longest line is the only one which is not throttled, this is the logical conclusion, because it would require the greater engine. Then the calculations would be as follows:

E. P. = N. P. (1.1 + KL)
N. P. = 50 pounds.
K for 2½-inch hose and 1⅛ inch nozzle is 0.167
L = 500 ÷ 50, or 10
Then E. P. = 50 (1.1 + .167 × 10) = 50 × 2.77, or 138.5 pounds.

This is the pressure at the engine. This engine pressure would give around 57 pounds at the nozzle on the 400-foot line and around 67 pounds at the nozzle on the 300-foot line, if the pump discharge outlets to which the hose is attached were not throttled, or partly closed.

Fire Fighting

To the Editor:

The following is a mythical fire which a volunteer fire department might be called upon to extinguish. What is the proper method of procedure at such a fire?

You are in command of a pumper equipped with the usual equipment such as ladders, 2½-inch hose, a 100-gallon booster tank, 200 feet of ¾-inch hose and two 2½-gallon foam extinguishers. Your truck is the only one available to answer the alarm.

A large truck has collided with a gasoline tank truck. The gasoline truck has, from the impact of the collision, toppled over on its side. The driver has been pinned in the cab. One of the compartments in the truck has been severely damaged and gasoline has run out in large quantities and has ignited. When you arrive at the scene, both trucks are blazing.

C. W. S.

Answer: The equipment carried on the truck would be of little use in handling the fire described. The gasoline would have flowed over a large area and would likely continue to flow from the ruptured tank. A foam stream is ineffective on burning gasoline flowing from a point above the ground. The quantity of water you have will not go very far, unless you carry an atomizing nozzle (fog nozzle, vapor nozzle, etc.) with you.

Your first task is to get the man out of the cab. This might be accomplished by using the booster line and spraying the stream while a man gets to the cab and smashes the door or breaks the window therein and gets the man out. During this operation a foam extinguisher could be used to cover the burning liquid in the neighborhood of rescue operations.

If the burning gasoline can be driven back along the pavement from the cab using the booster line, this might be attempted as part of the rescue operations. But one thing is sure, there will be practically no chance of saving the truck with the limited water and foam carried on the apparatus.

Fighting Fire with Gasoline

To the Editor:

In one of the various "quiz programs on the air, the following question was asked: "An expert in fire extinguishment was on hand when a bale of cotton caught on fire. There were three buckets each filled with the following; one with sand, one with sawdust and one with gasoline. He used one of these buckets and its contents to extinguish the fire. Which one did he use?" The answer as given to be correct was the bucket filled with gasoline. Have you ever heard of this method of extinguishment?

S. L. U.

Answer: I have never heard of gasoline being used for extinguishing fires in cotton bales, but I have heard of kerosene being so employed.

Kerosene will penetrate a bale much more readily than water will, and where the fire is burning within the bale, it can be extinguished by applying kerosene in quantity to the top of the bale. The kerosene soaks through and extinguishes the fire.

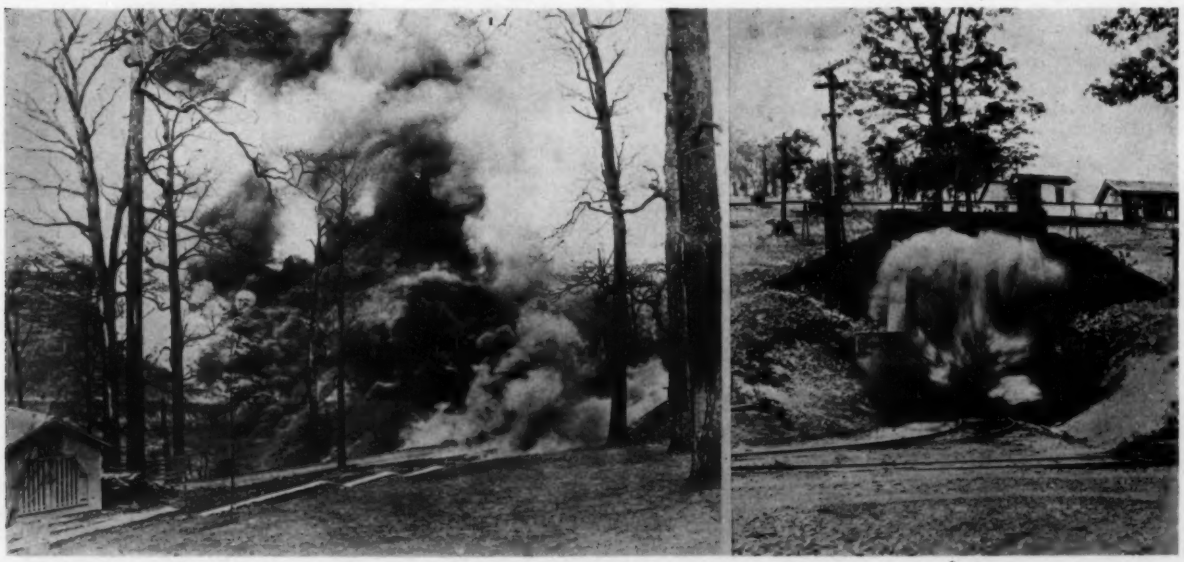
It would be extremely hazardous to use gasoline for this purpose, for if there were a spark of fire on the surface of the bale when the gasoline was applied, an explosion would likely occur, and the loss would be increased.

Pumper Hook-up

To the Editor:

We have had some discussion as to which hookup will pump the most water from draft. A 6-inch and a 3-inch suction are used.

"A" claims that a 3-inch to the pump and a 6-inch to the water will draft more. "B" says that a 6-inch to pump and 3-inch to water will draft more because the 6-inch will act practically the same as a vacuum

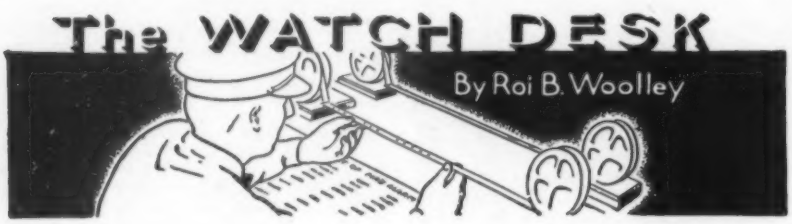


Man-Made Dust Explosions Used to Study Mine Hazards

Each day experiments are conducted at the experimental mine of the Department of Interior at Bruceton, Pa., to determine the cause of various types of mine disasters. Due to the ability of the engineers to reproduce all the conditions of actual mine disasters, considerable information has been added to the known facts regarding such hazards. At the left are shown the flame and smoke emitted from a mine following a dust explosion. The flames were about six hundred feet long. At the right, is the ignition of a coal dust cloud by an electric arc in the pit mouth of the experimental mine.

chamber. Which is the better arrangement? H. N.

Answer: Using the six-inch suction at the water supply and three-inch connected to pumper should give a little better performance than the reverse arrangement, because the strainer on the six-inch suction represents less friction loss than the strainer on the three-inch. As far as the hose itself is concerned (forgetting the strainer) both arrangements should give practically identical results.



Our inquiring reporter overhauls the firemanic news of the day

Our New England Contrib

Crabmeat salad is *piece de resistance* at School Street fire headquarters, Marblehead (Mass.). Dismantling pump on old Eng. One, hauled out of reserve to fight fire at Wyman's Woods, the Braves found a half-dozen crabs had been drafted through suction pipe from Salem harbor. No wonder the Braves "crabbed" about failure of the old boiler to give pressure.

* * *

Eddie LaFrance (no relation to w.k. apparatus mfr.) drove golf ball from second tee at Oak Ridge Golf Club, Brockton (Mass.). It hit Roy Drew in the hip pocket, igniting a loose match. Fellow golfers, seeing smoke pouring from Drew's pants, rolled him on ground. No damage except crushed pipe, and hole in clothes. Is this another version of the "hole in one?"

* * *

In Brockton (Mass.) W.P.A. workers, hired to guard fire alarm boxes against epidemic of false alarms, were arrested for drunkenness, after Braves complained plenty phony alarms were being sounded in supposedly guarded districts. Police said they found guard (?) too plastered to catch pranksters. They can lean on shovels, but are not so good on fire alarm box posts.

* * *

In Boston (Mass.) piece of paper floating on breeze whisked into window of Mrs. Antonetti's kitchen, landed on hot cook stove, blazed up. Mrs. A—in another room, saw blaze, ran screaming to street; pedestrian pulled box, five engines, two trucks, one rescue company, one boat, and many chiefs responded—"no damage."

* * *

In Middleboro (Mass.) $170,000 fire destroyed Rock Mfg. Co. six months after Rock Village residents lost fight by four votes to have town water mains extended so as to protect community's only industry. Result, 100 people outa work—a good business kaput!

* * *

Over in Everett (Mass.) the Braves are experimenting with clever small portable radio set to be carried on firemen. Credit to Chief James J. Evans and aide, James E. Sullivan.

* * *

They're gonna burn down a two-story building in Washington (D. C.) and Braves are asked to stay away. Sort of a test to prove efficiency of carbon dioxide gas methods of fighting fire, we're told.

Department of Red Faces

In New Haven (Conn.) Patrolman Joseph Dolinski "seen his duty and he done it." He tagged official auto used by Fire Chief Lawrence E. Reif for—of all things—being parked in front of a fire hydrant. Ohmigosh!

Automatic (?) Alarm

In Philadelphia (Pa.), according to two contribs' items, crackling noises awakened Mrs. Miriam Boone. She discovered a fire near the heater in the basement had heated the pipes, sent hot water circulating through the radiators. Now in N'Yawk we'd a just banged right back on the pipe for the janitor to turn *off* the steam, and slept on!

Pause in the Parade

While he was bravely leading parade of 2,000 vamps and thirty pieces of apparatus in parade in Reading (Pa.), policeman Tomlinson's motorcycle caught fire. A few of the vamps marked time, while about 1,990 went to work on the fire. Only damage was to time schedule.

More Ride Thumbers

Wm. (Bill) Montgomery, North Adams (Mass.), sends us story about the Braves of his town who traveled in style to and from a small blaze. Seems that when their truck broke down, they hailed the first vehicle—a taxi—threw in an extinguisher and themselves, tore to the fire (wota break for the taxi driver), doused it, then returned in style to the fire house. Deponent sayeth not who footed bill.

For Peat's Sake!—

Several contribs', including friend T.G.S. of Dedham, Mass., sent us story of Mrs. Cora Bennett's fire. Mrs. B., living in Quincy (Mass.), saw smoke coming up through cement floor of cellar. So she called the Blueshirts. It puzzled them, too, until after much hunting they broke through the cement and found a smouldering vein of peat. Fire had followed the vein from a peat bog, nearby.

Page Brother Ripley!

You dope this 'un out—sent by Chief Mose Nelson, Richmond (Ky.). A Mr. and Mrs. Whitaker, that city, left home with their two children, of a Sunday night. They thought they'd blown out kerosene lamp, but hadn't and John Whitaker (no relation) nearby, seeing flaming lamp, ran into house and pitched lamp out the window. Said lamp landed right onta family's pet bunny, dousing he, she or it with flaming oil. The animal bee-lined it under the Whitaker home, pursued by "King," family's pet bulldog. Neighbors, panicky, expecting house to go up, summoned Richmond firemen. They arrived about time "King" brought the burned bunny into the open. "King" gets orchids, Bunny gets hell!

Hot Off the Ticker

Five fires in four hours near one alarm box gave Brighton (Mass.) Braves jitters. . . . "Fire Prevention Week" gave Chief Phelan's "smoke eaters" plenty work, twenty alarms in single day—one three-bagger. . . . Forest fire-fighters are gonna be dropped by parachutes into danger zones to fight fires, 'tis said. . . . 1940 N. Y. State Driver's licenses will bear a fire warning injunction. . . . War ministry of Rome (Italy) bars fire trucks from sounding sirens "to avoid unjustified alarm of civil population.". . . London blackout was marred by big fire in furniture store that took 50 engines to subdue. . . . Mrs. Aponpi, N. Y. C., drenched nightgown and bathrobe with kerosene, set fire to herself—died in agony. . . . Firemen of Cincinnati (O.) aided in rescue of 5,500 lb. elephant by playing high-pressure streams on 'er. . . . Blast in Wyoming, laid to lad shooting into dynamite, killed five boys. . . . Fire over 1,000 feet below surface said to have done $100,000 damage to Belmont silver mine near Tonopah (Nev.). . . . In Hollywood (Cal.), 14-year old Caryll Ekelund, young girl actress, died from burns when her dress caught fire from Jack o' lantern on Halloween night. . . . Another Halloween casualty was Leonard Farley, 31, social worker (N. Y. C.), whose costume caught fire from cigarette. . . . Three of funnyman Chico Marx's automobiles were destroyed by fire. . . . Fireman Wm. Gallagher, 48, of Eng. Co. 69 N.Y.F.D., was badly injured when apparatus struck bump, throwing him off. . . . Near Sedalia (Mo.), Fire Chief John Lueck, rushing to grass fire in official chariot, collided with fire truck driven by Al Lueck, his brother, headed for same fire; nobody badly hurt. . . . Casualties at N. Y. State Fireman's Assn., N. Y. C., show were 17 Braves hurt, one woman hit by high-pressure line, sent to hospital, many others drenched. . . . In Oran, (Algeria) an Arab woodcutter put out flames in his flowing robe by rolling down a grassy slope, but he started high forest fire that swept over 20 miles. . . . Safety Director Geo. E. A. Fairley (and Chief Phelan), Pittsburgh, want fireboat, saying "boat we now have is a joke. It's second-hand and not built for river duty.". . . To the many contributors whose news items are held over—thanks-a-million; we'll be seein' ya.

A Correction

On page 538 of the November issue is an account of how fire departments observe Fire Prevention Week. On that page, Carl B. Ahlgren is listed as Chief of Albany, Ga. He is Chief of Albany, Cal.

Among the Fire Fans

By Otis Smith

On November 13, the Boston Sparks Association held a reunion in honor of the few living survivors who fought the great Boston Fire of November 1872. Only three of the old fire fighters were able to attend and they were all over eighty-five years of age. They showed remarkable ability to recall their experiences and to relate them to the gathering.

It was a coincidental occurrence that on the night this association was honoring the survivors of the Boston Fire, an alarm was received from the same box that was sounded for the Great Fire sixty-seven years ago. A second and third-alarm quickly followed, and the Sparks temporarily adjourned the meeting and transported the veterans to the scene of the fire. After the fire had been put under control, they returned to the meeting and resumed the program.

Vice-President Alfred N. Miner and William F. Bowers, Chief of Department of the Boston Protective Department, spoke and paid tribute to the gallant heroes of the conflagration of many years ago. Chief Timothy G. McCarthy of Weymouth and Deputy Chief Creedon of Quincy also spoke.

Preparations for the issuance of the 1940 fire line badges were made with Fire Commissioner Reilly of Boston. The entire membership of the Sparks Association receives the badges and will render assistance at the various multiple alarms when necessary.

A letter from Mr. Joseph H. Polio, 11 Klagg Ave., Trenton, N. J., requests information on organizing a fire fan club. Mr. Polio will be pleased to hear from any club officials who may be able to oblige with information on this subject.

The November issue of the *Phoenician News* has been received. We find in it an item calling on Otis Smith for some information. It concerns the introduction of the Maltese Cross into the American fire service. We have to confess that this item slipped our notice until too late for inquiry and inclusion in this column. Facts concerning the introduction of the Maltese Cross into the fire service will be obtained and printed in the next issue. Meanwhile, perhaps some reader can oblige with information on this subject.

Lawrence Ferman, thirteen-year-old mascot of No. 24 down in Houston, Tex., has memorized the locations of 900 odd fire boxes in that city. He also knows the company that answers the first, second, and third alarms in their proper order. This writer confesses to having memorized the locations of more than 1,000 of Baltimore's fire alarm boxes. We finally gave up trying to memorize more when we started dreaming of box numbers all night through.

Thanks to Morris Heitowit for that F.D.N.Y. signal stations book. The signals and other information in the book certainly did impress this writer. Even if we never get close enough to New York city to hear any of the signals. Buffs who would like further information on these books may reach Mr. Heitowit at 1015 51st Street, Brooklyn, New York.

Three New York state buffs dropped in on us the other day. They were Gordon Mullins and Frank Brannigan of New York city, and "Jimmie" Jackson of Oswego. Points visited included No. 6 Engine, No. 23 Engine, and the Arbutus Volunteer Fire Department. Despite all this vigilance, all the visitors heard were a few "silents" ticking off on the tapper. As was to be expected, as soon as we went to a nearby restaurant for dinner, a flock of boxes hit on the gong in the space of a few minutes.

The three buffs also performed a valuable service soon after reaching Maryland. On driving to the house of a relation of one of the trio, they were informed that he was in the hospital and in need of a transfusion. With only half an hour to spare, they rushed to the hospital and were given blood tests. Mullins and Jackson were found to be suitable, but Brannigan's blood proved to be of the wrong type. Jackson gave one pint and Mullins gave one-half pint.

According to Gordon Mullins, the Box 73 group of St. Louis, Mo., was organized Oct. 1. Fire Chief Cornoyer was among the twenty-eight persons present at the dinner marking the founding of Box 73. W. A. McDonnell was placed temporarily in charge of the group. We understand that the purpose of Box 73 is to enable the local buffs to aid the fire department in a constructive manner.

Also, we learn that Gordon Mullins is now Publicity Representative for the New York State Fire Chief's Association. Mr. Mullins may be reached in care of the Bell Club, 119 W. 33rd Street, New York City.

Leslie Keller, 1714 W. Baltimore Street, Baltimore, Md., has built a miniature aerial truck. The "big stick" is raised by air pressure. Leslie is interested in hearing from others who build fire apparatus models.

Kent Sagendorph, 143 Ridgeway Street, Jackson, Mich., sent us the following snappy letter which we quote word for word. Second oldest Box Club in Michigan, the Box 14 Club of Jackson is again planning a full schedule of activities for the winter of 1939-40. Jackson's nationally famous fire department has reduced the number of fires in the city to the point where our gang has to do something else than chase the rigs. We furnish speakers for Chief Ernie Daunter during Fire Prevention Week; we present awards to individual members of the department and trophies for the department athletic teams. Throughout the year the Club maintains a "coffee detail" which splashes into action when the boys have a long, cold vigil in this freezing weather. Our members have a bad habit of hanging around the engine houses at all hours of the night and swapping lies with the crew on duty. This has resulted, lately, in developing some whoppers which our Club points to with pride.

Although we number among our members the incumbent Mayor of Jackson, the City Manager, and others in official positions, politics in the Club itself has never been a problem. We are still enormously loyal to our founder-president, Hughie Smith, and re-elect him Chief of the Club at each annual election. Treasurer Bob Dicker has been handling our spare change for three years; standing committees have been standing so long that they have become practically fixed. The Secretaryship changes from year to year chiefly because each incumbent is exhausted at the end of his term and tries to pass the buck of responsibility for correct keeping of the minutes to someone else. Secretary Burton L. Zimmerman seems, however, to be bearing up nobly under the strain.

Our charter limits membership to fourteen; all active fire-fans and boosters for the department. We have one vacancy now, caused by the death of Howard Shea last summer.

A letter from young Edward Bennett, 36 Westside Road, Milton, Mass., in which he states that he is interested in collecting fire subject photos, and we presume, in trading them. Mr. Bennett has about one hundred photographs of apparatus at present.

Thanks to Edward Sprangers for those swell pictures on the Philadelphia Fire Department. They would make a valuable addition to anyone's collection. Mr. Spranger's address is 2228 W. Oakdale Street, Philadelphia.

Material for the January issue of this column should reach me by December 30. Material received after that date cannot be used until the February issue.

Fire Chief Leo Lynch Dead

The fire department of East St. Louis, Mo., recently mourned the death of Fire Chief Leo Lynch, who died at the age of fifty-three. At the time of his death, Chief Lynch was suffering from a back injury received in the line of duty. He was a veteran of thirty-three years on the force.

Russell Wright has been chosen the new head of the East St. Louis Fire Department to succeed Chief Leo Lynch.

Indiana Trains Firemen

The Indiana Firemen's training program is handled under the heading of the "Indiana Fire Service Training Schools," a joint arrangement between Purdue University and the State Fire Marshal. The Fire Marshal pays the salary and expenses of a full-time man and furnishes materials and equipment for regional schools. The University pays the expenses of the state school and pays the salaries and expenses of the part-time instructors, used to assist the Fire Marshal's man in conducting special classes throughout the state.

An advisory committee of twelve men is chosen from the four firemen's organizations of the state. This committee is called together three to five times each year. Individual department drillmaster classes are conducted by the drillmaster in his own department as a follow-up of the regional schools. Special training classes have been conducted by Emmett Cox, and have been of an introductory nature. These classes are to be expanded in the near future.

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Miscellaneous Questions

Answers Will Be Given in the Next Issue of This Journal

Question 1. What difference is there between a stream delivered by a long pipe and one delivered by a short pipe?

Question 2. State two precautions which should be observed in operating a controlling nozzle.

Question 3. What effect has friction on the flow of water through hose?

Question 4. Upon what does friction loss in fire hose depend?

Question 5. Which has the greater friction loss for a given flow—3-inch hose or 2½-inch hose?

Question 6. What is the chief object in using parallel siamesed lines of hose instead of single lengths?

Question 7. To what extent does the use of 2½-inch couplings on 3-inch hose increase the friction loss of the 3-inch hose over 3-inch hose with 3-inch couplings?

Question 8. What floor is considered the highest to which a stream may be thrown effectively from the street?

Question 9. If a water tower stream is to be operated in the 7th, 8th, 9th and 10th floors of a building, where on the street should it be placed?

Question 10. Give five causes of defective streams.

Question 11. Give three instances where a large stream should be used rather than a small one.

Question 12. What rule is commonly used for determining how far a stream will reach when the nozzle pressure is known?

Question 13. Name three holders for heavy fire streams.

Question 14. What method is considered the quickest and most satisfactory for getting a line of hose to one of the upper floors in a building which is on fire?

Question 15. State a precaution which must be observed when stretching hose up the face of a building.

Question 16. What precaution must be taken when putting a line in operation on an ice covered roof of a building?

Question 17. How would you guard hose lines where they are laid across railroad tracks?

Question 18. When fighting a fire in a building equipped with a standpipe system, why does not the fire department use the house hose attached to standpipe instead of disconnecting it and putting on department hose?

Question 19. You arrive at a building where a fire is burning and find the standpipe siamese burred so badly that it will not take the hose coupling. What would you do?

Question 20. How would you proceed if you wished to put 4 lines of hose into the siamese of a standpipe system?

Question 21. What method would you employ to get a heavy stream on the roof of a 20-story building in order to operate across a street on a burning building?

Question 22. Explain spontaneous combustion (spontaneous ignition).

Question 23. The pressure on a 1¼-inch nozzle is 64 pounds; what is the discharge in gallons per minute?

Question 24. What will be the discharge from a 1-inch nozzle if the pressure is 10 pounds?

Question 25. The pressure at the open butt of a line of 2½-inch hose is 9 pounds per square inch. Find the discharge.

Question 26. The pressure at a 2½-inch open butt of a hydrant is 36 pounds. Find the discharge.

Question 27. What will be the discharge from a sprinkler head when the pressure is 30 pounds per square inch?

Question 28. What pressures are considered effective on 1⅛- and 1¼-inch nozzles? On 1½-inch and larger nozzles?

Question 29. Name two makes of cellar pipes commonly used in fire department work; make two types.

Question 30. What is the principal difference between the Hart and Baker pipes?

Question 31. Outline briefly the essential points in the proper operation of the Baker (or Hart) cellar pipe?

Question 32. What is the chief disadvantage of the bent cellar pipe?

Question 33. For what is the sub-cellar pipe used? How is vertical deflection of nozzle secured?

Question 34. Name four operations to which the claw tool is commonly put.

Question 35. What appliance is useful in moving railroad freight cars?

Question 36. What appliance is most effective for handling localized fires in cellars?

Question 37. How many outlets has the Bresnan distributor?

Question 38. Name two other distributors than the Bresnan? How do they differ from the Bresnan?

Question 39. What is a "dog" chain and what is its purpose?

Question 40. Name five door openers. Which of them are the most commonly employed in fire departments?

Question 41. How does the Hale door opener differ from the Detroit?

Question 42. Which is better for opening a door, which swings outward, from the outside: a Hale door opener, or an adz?

Question 43. What type of soda and acid extinguisher is most commonly used on motor fire apparatus?

Question 44. In what respect does the ordinary soda and acid extinguisher differ from the Babcock extinguisher?

Question 45. Name two types of fires on which the soda and acid extinguisher should not be used?

Question 46. Is the ordinary type of soda and acid extinguisher suitable for localities where it will be exposed to freezing temperatures?

Question 47. State briefly the principles of operation of three types of "frostproof" extinguishers.

Question 48. What fire extinguishing fluid is a non-conductor of electricity?

Jim Housley Dead

James R. Housley, well-known Eureka Fire Hose Representative, died December 6 at Hot Springs, Ark. He was fifty-eight.

Mr. Housley joined the Atlanta office of the Eureka organization in 1919, became Branch Manager at Nashville, Tenn., December, 1929, and held that post until May 1, 1938, at which time he was given an extended leave of absence because of ill health.

His widow, Katherine, and one daughter survive.

Pumper Delivered to Mattydale of the Salina Consolidated Fire District

A 500-gallon pumper made by the Buffalo Fire Appliance Corporation, Buffalo, N. Y., was delivered to Mattydale of the Salina Consolidated Fire District, Syracuse, N. Y. It is a streamlined model with an enclosed cab. The pump is of the two-stage centrifugal type. Equipment such as extinguishers and other appliances are mounted in cabinets.

Correspondence

Properties of Cyanogas

To the Editor:

It recently came to my attention that a gas called "Cyano" was being sold throughout the city. I immediately investigated the matter and found that this Cyano gas is packed in tin containers of four and six-ounce sizes.

The analysis of this gas is as follows: Calcium cyanide, not less than 42 per cent. Inert ingredients, no less than 58 per cent. This is in a powder form, which liberates hydrocyanic acid gas on exposure to air.

It seems that this gas can be purchased almost anywhere. We discovered about six dozens of these tin containers stored in a wooden bin on the second floor of a hardware company located in the high value district.

In my opinion, this gas constitutes a hazard in storage and in use it is a hazard to public health, if not handled by experienced people.

Cordially yours,
NICK A. PHELAN,
Chief, Fire Dept.
Pittsburgh, Pa.

This was referred to the American Cyanamid & Chemical Corporation, and the following letter was received:

To the Editor:

We welcome the opportunity to give you the following specific information with regard to our product Cyanogas Calcium Cyanide.

As you may well imagine, the question of storing Cyanogas and other fumigating materials of a similar nature has, at various times in the past, been brought up for discussion by fire officials in municipalities and we can tell you that in all cases, after an explanation of the specific character of these products has been presented to the authorities, no difficulty has been encountered in obtaining approval for storage of these materials in reasonable quantities and without requiring any special storage conditions or facilities.

Cyanogas Calcium Cyanide is, of course, packed and shipped under regulations prescribed by the Interstate Commerce Commission and all shipments undergo rigid inspection before leaving our plant. The product may, therefore, be stored indefinitely and the only requirement for storage is that it be kept in a cool and dry place.

Cyanogas Calcium Cyanide is very generally distributed and stored in quantities throughout the United States and in 55 other countries. The Underwriters' Laboratories of the National Board of Fire Underwriters have issued a certificate regarding the fire hazard of hydrocyanic acid gas (the active ingredient in Cyanogas) and particularly of the fire hazard of Cyanogas in storage. This certificate follows:

"The product consists of calcium cyanide together with inert ingredients. When treated with water or acids or exposed to moist air, hydrocyanic acid gas is liberated.

"The fire hazard of the hydrocyanic acid gas is in a class with that of illuminating gas.

"At temperatures below 110° F., when release of the hydrocyanic acid gas is accomplished by exposure of this product to the atmosphere, there is very little, if any danger from fire or explosion, owing to the fact that concentrations produced under these conditions are below the lower flammable limit (six per cent by volume) of hydrocyanic acid gas in air. At temperatures above 110° F., if used in amounts of less than 18 lb. per 1,000 cu. ft. of free room space, the formation of flammable mixtures of hydrocyanic acid gas and air is not likely.

"The first hazard of the product in storage is judged to be small. It is susceptible to total damage upon exposure to fire or water. It should not be stored where it is liable to contact with water, acids or chemicals.

"Warning: 'Cyanogas' and hydrocyanic acid gas are powerful poisons.

"Authorities having jurisdiction should be consulted with regard to conditions under which the product may be used.

"Marking: 'Cyanogas.'"

Cyanogas Calcium Cyanide is in powder form and contains approximately only 25 per cent available hydrocyanic acid, which is liberated upon exposure to air, when the material is spread out over a wide area. The gas is liberated only from the exposed surfaces, so that, even if the containers were broken open, very little gas would be freed. If the material comes in contact with water, the dangerous effect of any gas which might be liberated would be nullified by the absorption of the gas by the water. If exposed to fire, the gas is completely oxidized in the flames, forming carbon dioxide, nitrogen and water vapor, all harmless constituents. You will observe that the Underwriters' Laboratories report states that the fire hazard of the product in storage is judged to be small.

In this same general connection, some years ago a careful study was made of the fire and health hazard of cyanide fumigants in storage by Dr. Edward Bocker of the New York Health Department, in conjunction with officials of other departments concerned, and his findings on Cyanogas are given below:

"Unlike sodium or potassium cyanides, it will generate hydrocyanic acid on exposure to moisture contained in the air. The rate of evolution is slow. It is not considered to be dangerous from a public health standpoint because, first, it is stored in double sealed, tin containers, effectively preventing any generation of hydrocyanic acid. These containers also have been approved by the Interstate Commerce Commission and thoroughly tested by the Bureau of Explosives, and are approved for interstate shipment over all ordinary common carriers. Second, if a fire should occur in a building in which this material was stored, there would be no tendency of the containers to rupture, inasmuch as the material is not explosive."

We believe that your correspondent will be relieved to have this definite and authoritative evidence that there is no practical fire or health hazard in connection with the storage of Cyanogas and we again wish to say that we appreciate the opportunity to present these facts since we know from experience that fire authorities are definitely not prone to place unreasonable restrictions upon the handling and storing of any products, but that they are primarily interested in the protection and safeguarding of the public.

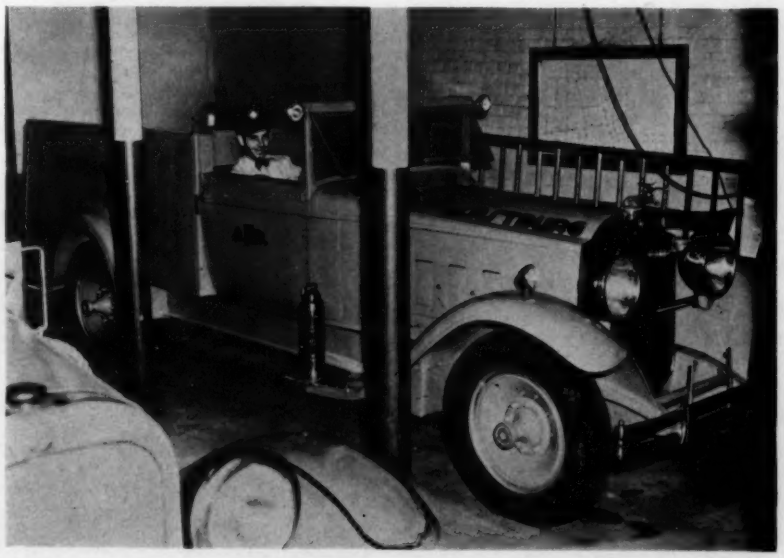
Yours very truly,
L. L. LEHRITTER,
Insecticide Department,
American Cyanamid & Chemical Corp.

What Is Fireproofed Wood?

To the Editor:

Some time ago you answered a question: "What Is Fire and What Is Flame?" Possibly the accompanying comments may be of interest to your readers on "What Fireproofed Wood Is."

Fireproofed wood is chemically impregnated wood permanently incapable of supporting combustion. One of the conditions that influence the degree of combustion is the presence of oxygen. If the percentage of oxygen is reduced, the intensity of combusion decreases.



Here's an Old, Old Story, but the Angle Is New

Amherstburg, Canada, firemen are far from lazy. In their spare time the volunteers of the village constructed a rescue truck and mounted it on an old sedan. It was complete even with an oxygen tank. However, two mistakes were made—one that the apparatus was constructed in the fire hall, and two, they forgot to measure the width of the door. Now the problem before the town council is shall the town spend money to enlarge the door or shall a brick wall be broken through?

The reduction in the amount of oxygen in the air may take place in several ways. In the process of burning, other gases may be liberated and become mixed with the air, which will bring about a diminution of the oxygen in the surrounding air to a point where the material will cease to burn.

The aim in fireproofing wood or other cellular substances is to treat or impregnate them under pressure with stable chemical compounds that are known to retard combustion. When heat is applied to fireproofed substances, it begins to decompose the injected chemicals into non-poisonous gases which prevent the oxygen of the air from uniting with the carbon of the impregnated materials. As long as the flames or intense heat is applied to fireproofed wood, checking, charring and slow destruction continues without contributing any fuel value.

Combustibility is measured usually in terms of loss in weight. Under test conditions it has been found that untreated wood loses an average of eighty per cent of its weight due to combustion, while fireproofed wood loses only about twenty per cent of its weight due to slow charring. Fireproofed wood is subject to a lesser degree of change in volume than in the case of untreated wood; moreover, its tendency to shrink, warp and swell is almost negligible.

Fireproofed or non-combustible wood will not receive, sustain, or communicate flame.

Yours very truly,
ERNEST F. HARTMAN,
Pres. Protexol Corporation.

First Drill Team

To the Editor:

In your September issue of FIRE ENGINEERING, I read about the drill team of San Francisco being the first to be organized, and that Boston organized one last year. As I understand it, they must be very good teams. I am thankful to say that we have a drill team of sixty men and they are all volunteers. We attended an average of about forty parades every year for the last five years. The team is fitted out with the regulation Fireman's Uniforms. Our instructor is Captain James Frye, one of the finest of Drum Majors in this part of the country, and veteran of the last war.

Sincerely yours,
RICHARD H. ROWLEY,
Munhall, Pa.

Information Regarding Old Apparatus

To the Editor:

I am writing this in answer to the query of Edward Scribner of Schoharie, N. Y., in September's issue of FIRE ENGINEERING, but through your hands, in the hope that I may benefit others besides Mr. Scribner, and also that others may correct me if I seem to err.

The history of the New York Fire Department, that can be traced from record, dates back to 1648, when Peter Stuyvesant appointed four fire-wardens to inspect the wooden chimneys of the thatched-roofed wooden houses of that village.

The introduction of fire engines or pumps was made in 1731 when two fire engines were imported from England, and were built by Richard Newsham.

The first fire engine built in America was built by Anthony Nichols of Philadelphia in 1732; the second by John and Thomas Hill of Boston in 1733; and the third by William Lindsay of New York in 1737.

From this, it can be judged that the first engines were imported, but their manufacture was then immediately taken up by men in this country, and by 1792, when W. C. Hunneman began their manufacture at Boston, he made such progress that his engines were sent to various countries in Europe as superior to other makes. Since then, there was very little importation, if any.

As to the photo included in the letter, the apparatus pictured is very similar to pictures of one of the original 1731 versions of Newsham's engine. As to the "Deluge" part of it, I can only say that one of the engines was placed in service with the Hudson Engine Company 1, commonly known as "Hayseed," and the other with Chatham Engine Company 2.

Yours sincerely,
WILLIAM H. WALLACE,
Rockville Center, N. Y.

Kent, Ohio, Has New Chief

After twenty-three years as a fireman, Robert M. Clark has attained the rank of Chief of the Kent, Ohio, Fire Department. He has served the department in the capacity of private, Lieutenant, Captain, and Assistant Chief.

Chief Robert M. Clark

In his youth Bob Clark was so vitally interested in the fire department that he assisted in pulling the hose carts to the fires. During his years of service, Clark has been instrumental in securing boats and a boat house on the Cuyahoga river. The boats are to be used for rescue work. He worked toward the procuring of the first truck, which was financed by public subscriptions.

New Job For Chief Herring

If things continue the way they have in the past, Chief Albert Herring, Murphysboro, Ill., will be a serious contender for the record of holding the greatest number of jobs at one time. In addition to his duties as Supervisor of Cemeteries, Vice-President of Park Commission, etc., he was given his nineteenth job, Manager of the Public Relations Department, Murphysboro, Ill. Says Chief Herring, "So you see I now have job number nineteen. What will number twenty be?"

Chief Herring, besides his city jobs, has found time to serve actively on committees of the I.A.F.C.

Nichols Opens New Station

The new fire station at Nichols, Conn., erected at a cost of $18,500, was opened recently with appropriate ceremonies. The main portion of the building is 45 x 46 feet, large enough to house the company's three pieces of apparatus, a new Mack 500-gallon pumper, a 1930 Ford hose wagon and a Reo chemical.

The exterior of the building is of brick and shiplap, with a non-combustible roof. The north wing has a large entrance hall to the second floor, also a boiler room, lavatory and a desk alcove. On the main floor is also a three-tier hose drying rack to accomodate 1,000 feet of extra hose.

On the second floor is a meeting room, fire place, lavatory and kitchen. Provisions have been made at the rear of the building for future quarters, in the event of permanent drivers being appointed.

The new station was designed by David Plumb, architect, and a member of the Nichols Fire Company.

THOMAS F. MAGNER.

New Fire Station at Nichols, Conn.

Fire Prevention Programs

Since the September issue of FIRE ENGINEERING, there has been published in each issue, brief accounts of how various fire departments observe Fire Prevention Week. This installment concludes the series.

New Albany, Ind.
George W. Hanen, Chief

Our program for Fire Prevention Week will consist of a thorough inspection of all business houses, stores, factories, schools, institutions. Placards, literature and newspaper articles will be published a few days before October 8 and will continue throughout the week in an endeavor to make the city fire conscious.

Louisville, Ky.
Edward A. McHugh, Chief

The Fire Prevention Week Committee of our city met on September 1 to lay plans for the 1939 Fire Prevention Week.

We contemplate having uniformed firemen present talks at the schools and at luncheon clubs and having radio talks by club presidents. There will be window displays. We expect to have banners on fire apparatus which will tour the city. Announcement will be made at church assemblies and on regular Sunday bulletins.

Uniformed firemen will make inspections of the homes in our city. Inspections of industrial plants will be made by regular fire inspectors. There will be fire prevention trailers in theatres and demonstrations in city parks. Posters and inspection data will be distributed to mercantile houses; 100,000 fire prevention pamphlets are to be distributed by Boy Scouts. Fire prevention talks and demonstrations will be made at Scout meetings. One period each day during Fire Prevention Week will be set aside at all schools, at which time fire prevention will be discussed. Inspections of all schools will be made and fire drills held.

Kenkakee, Ill.
Roy W. Marquart, Chief

We do observe Fire Prevention Week. The local papers cooperate and we have articles on this subject during the week. We also make inspections of all factories, business houses and have fire drills at all schools, public and parochial, although we make quarterly inspections of these during the entire year.

Portland, Ore.
Fred W. Roberts, Fire Marshal

Portland will observe Fire Prevention Week this year. Preliminary meetings were held during August with the Fire Wastes Committee and the Junior Chamber of Commerce.

Posters, placards and stuffers, as well as correspondence stickers have been ordered from the National Board of Fire Underwriters and the National Fire Protection Association. Leaflets have been printed for distribution to all homes by Firemen and Boy Scouts.

A proclamation setting aside the week of October 9 as Fire Prevention Week will be made by the Governor and the Mayor. There will be a fire prevention parade.

Letters will be sent to all city editors, churches, civic and community clubs, Boy Scouts, Girl Scouts, women's clubs, etc., requesting cooperation and arranging dates for fire prevention talks at meetings and luncheons.

Spot announcements will be made over the radio. Fire playlets and talks will be given.

Large stores will be contacted for window displays.

Grade school talks will be made by firemen and home fire hazard charts will be distributed to pupils in all city schools. School fire marshal badges will be presented.

An oratorical contest will be conducted in all public high schools with $275.00 in cash prizes. The State Fire Marshal's medal for conspicuous bravery or meritorious acts in saving life or property will be presented.

There will be street displays and stunts by members of the fire department drill team.

Free literature will be distributed.

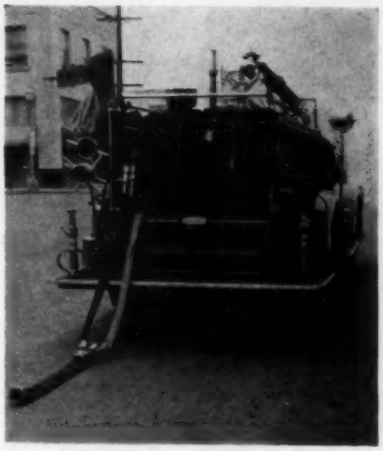
Method of Laying Hose

Chief P. E. DePaul, Vancouver, Wash., has submitted the following data on methods used by the Vancouver Fire Department in laying hose.

The method of laying two 1½-inch hose from hydrant to fire is as follows: The hydrant man, No. 1, takes the hydrant as instructed while the driver, No. 3, lays the 2½-inch hose to fifty feet beyond the fire. A third man, No. 2, puts on the clamp, lays the Y on the ground and takes one of the 1½-inch lines into the building with a fog nozzle and a five-eighths-inch tip. No. 3 breaks the 2½-inch hose and connects the same to the Y. No. 1, after turning on the water, proceeds into the fire and assists in the line operation.

The method of laying two 1½-inch lines from fire to hydrant is as follows: No. 1 lays the Y on the ground, then stretches both 1½-inch lines out to the rear of the rig about fifty or sixty feet, and holds them down. No. 2 connects up 2½-inch hose to the Y and removes enough hose to reach the building, No. 3 stops the rig fifty feet before the building involved and remains in the seat until given the signal to proceed by No. 2. He drives to the hydrant, connects up, and turns on the water.

The method of laying two 1½-inch lines forward and reverse is as follows: No. 1 takes the hydrant, No. 3 lays the hose, and No. 2 puts on the clamp, lays the Y on the ground, and starts in the direction of the fire with both 1½-inch



Illustrating the Method

lines. No. 3 breaks 2½-inch coupling and connects the Y, using the double male, then picks up Y and helps overhaul, bringing the Y to the entrance of the building, and proceeding from there to help No. 2. After completing work at the hydrant, No. 1 breaks the 2½-inch coupling, and connects it to the other 2½-inch coupling, using the double female. He then releases the clamp.

Firemen Use Canned Water

Ten-gallon milk cans played an important part in extinguishing a blaze in a two-story frame house in Danville, Cal. With the aid of neighbors, the volunteer Fire Department prevented the blaze from spreading to nearby buildings. When the water supply in the truck was exhausted, ten-gallon cans were used to replenish the supply.

Joplin, Mo., Augments Its Fire Department Strength with Four New Units

Pictured before Headquarters No. 1 of the Fire Department of Joplin, Mo., are four new Mack pumpers, the most recent addition to the fire fighting forces in service for this community. Each cab is capable of seating a three-man crew. Three of the units are Type 75s and have pump capacities of 750 gallons per minute, the fourth being a Type 50 with a 500-gallon per minute pump capacity.

San Antonio Improves Department

In the improvement of the Fire Department, the city of San Antonio, Texas, added two triple combination pumping stations, each equipped with

Chief C. A. Hart

750-gallon centrifugal pumps and 100-gallon booster tanks. In addition to this a chassis was purchased and is now being converted by the Fire Department shops into a city service ladder truck.

The new Central Fire Headquarters, with modern repair shops adjacently housed, constitutes another improvement. The building is a modern fireproofed, two-story structure of reinforced concrete construction with stone facing, and all outside exposures are fireproofed.

The lower floor has five doors for the apparatus; either side are other doors especially for the cars of the Chief's, Fire Marshal's and arson Investigator. In addition, the lower floor contains a modern kitchen, lockers for supplies, etc.

The upper floor has sleeping quarters located across the front of the building. Adjacent are the locker room and bath and toilet room with laundry tubs.

The offices are at the rear of the building, and they include offices for the Secretary, Fire Marshal, Bureau of Arson, Fire Prevention Bureau and the Chief.

The fire department shops are in an adjoining building, built of the same material as the station, and contains machine and repair shops, wood shop, paint shop, radio and battery shop and a basement connected with the basement of the fire station for supplies and parts.

Walworth County Officers Meet

One hundred and sixty members and guests assembled at the banquet for the ninth annual meeting of the Walworth County Fire Officers Association, held in the school auditorium at Fontana, Wis., October 6th. The splendid banquet spread by the ladies of the Fontana Fire Department was thoroughly enjoyed.

Chief C. V. Bachelle, Delavan Lake Fire Department presided over the meeting and gave his annual address of welcome.

Frank A. Doherty, First Deputy State Fire Marshal of Illinois gave an interesting address on the subject, "Arson and Incendiarism." In telling of the work connected with arson fires, he gave interesting facts and stories of cases and convictions, commending the able assistance rendered by the Fire Departments.

Dr. T. H. Young, Chief of the Durand, Ill., Fire Department, in a very forcible address on the subject, "Rural Fire Protection," told of the efficient cooperation and splendid work the volunteer firemen were doing in rural districts. "Fire prevention and fire control calls for constant drilling and study to make efficient firemen, so that the fireman of today has a classified profession," he stated.

Chief John P. Stahl, retired, of the Chicago Fire Department, in his short address, told of the value of constant training in the use of fire apparatus and the proper use of smaller pieces of equipment carried on the apparatus.

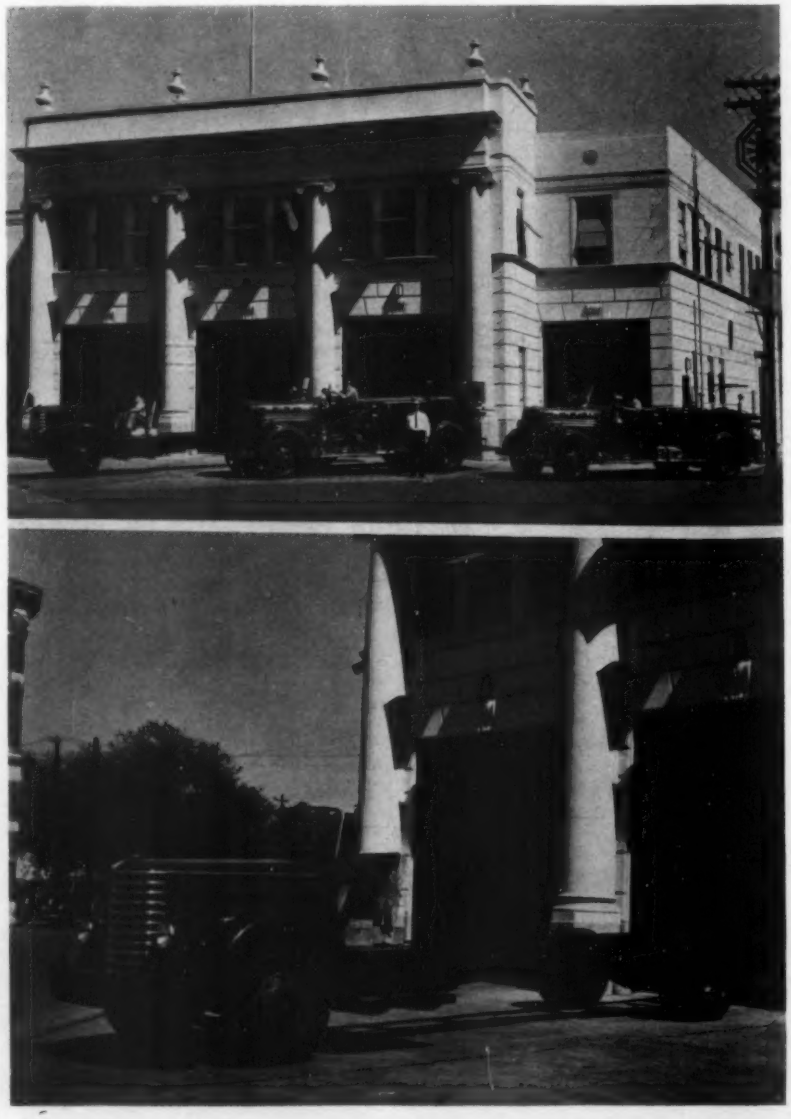
The same officers of the association were unanimously reelected to serve for another year. C. V. Bachelle, Chief Delavan Lake Fire Department, President; H. O. Robb, Chief, Sharon Fire Department, Vice-President, and C. A. Foster, Chief, Lake Geneva Fire Department, Secretary-Treasurer.

Through the efficient cooperation of the Fontana Fire Department the meeting was one of the most interesting and successful ever held. Musical entertainment was included in the program.

Four young ladies, called the "Firemen's Sweethearts" drew a round of applause for their music and songs. Other entertainment followed.

In the afternoon, an interesting program of ladder and hose drills was held, conducted by Chief Stahl and Captain Isacson of the Chicago Fire Department. This was followed by demonstrations on oil fires with fog nozzles, gas and foam portable extinguishers.

C. A. Foster.



Upper, Central Fire Headquarters with Two Pumpers and Chassis, and, Lower, Close-up of the New Chassis at San Antonio, Tex.

New A.D.T. Demonstration Studio Opened

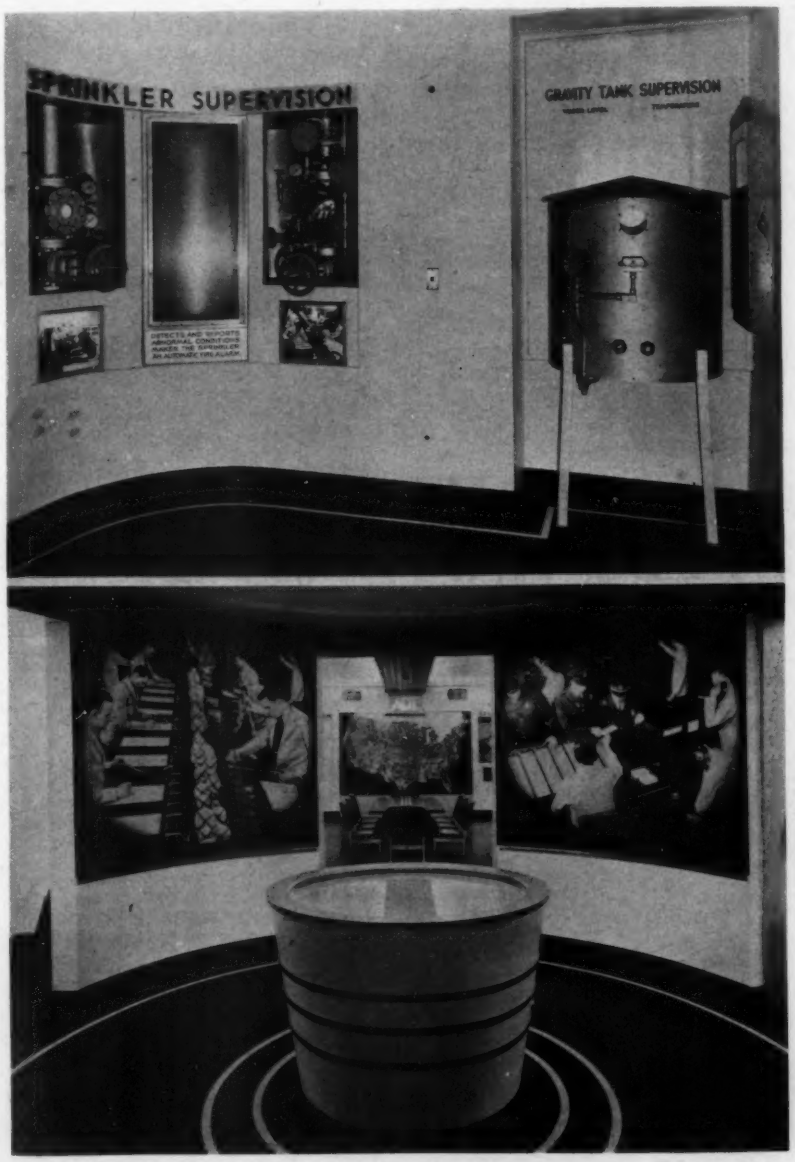
The recently completed Demonstration Studio at the Executive Offices of the American District Telegraph Company (A.D.T. Systems), 155 Sixth Avenue, New York, was shown publicly for the first time at a special preview on Friday, November 17.

The purpose of the studio is to show in a dramatic and easily understandable manner, by practical demonstration, the operation of the company's various electric protection systems against fire, burglary and holdup. Every effort has been made to demonstrate the equipment in a manner simulating actual operating conditions. At the same time, the studio has been designed to present a pleasing and artistic effect.

One of the most dramatic demonstrations is that of the Aero Automatic Fire Alarm, which automatically detects fire and summons the fire department. The Aero detector tubing is affixed to the ceiling of the room. The system is demonstrated by applying a match to a pan of alcohol on the floor, causing the temperature around the tubing to rise rapidly. In the initial demonstration a time clock on the demonstration panel had ticked off exactly twenty-seven seconds when the alarm gong rang showing that the system had operated as the result of the rapid increase in temperature. A thermometer on the panel showed a temperature rise during this period of 43 degrees.

Among the Company's services demonstrated in the studio are the Aero automatic fire alarm, sprinkler supervisory and waterflow alarm, manual fire alarm, watchman supervision, burglar alarms and holdup alarms for mercantile establishments and banks, and the Phonetalarm system for the protection of bank vaults, fur vaults, etc.

The room, modern in design, produces a striking effect through the use of life-size photo-murals portraying various aspects of the company's services, and dramatic transparencies which explain graphically the "cause and effect" of the operation of the various services. The studio was conceived and planned by Raymond K. Hyde, A.D.T. advertising manager, and designed by Lurelle Guild Associates. The complicated electrical and engineering installations were made under the direction of G. G. Purcell, of the A.D.T. engineering staff.



Two Views of the A.D.T. Demonstration Studio

Upper, working models of sprinkler and gravity tank supervision equipment. Lower, rotunda of the new demonstration studio.

Fire Problems of Parkway

Problems confronting fire departments adjacent to the Merritt Parkway were discussed at the October meeting of the Fairfield County Fire Chiefs' Emergency Plan, held at the Turn of River Firehouse, Stamford, Conn., on Wednesday evening, October 25.

One of the guest speakers of the meeting, Sgt. Willard Bushy of the State Police, discussed the Merritt Parkway, which is now nearing completion, revealing that it is thirty-six miles long, and that fire extinguishers were provided at the Toll Station in Grenwich and will be provided at the new Gas Station at New Canaan. There were telephones at important points, locked at all times and only available to state patrolmen. No plans had been made for public telephones for use by the general motoring public.

It was the opinion of those in attendance asking the speaker questions, that there should be some way available for motorists to send in alarms of fire, etc., as it was brought out that under ordinary circumstances, a state policeman would only pass a given point every twenty minutes and that in case of accidents, etc., this might be increased. It was also suggested to Sgt. Bushy that the telephone numbers of the nearest fire department, which had access to the Parkway, be printed at each telephone, so that no delay would result in a call.

Fire Protection

Lieut. John Howson of Eastchester, Chairman of the Westchester County Plan Parkway Committee, was also an invited guest, and discussed the various problems which the Westchester Plan has been confronted with, how they have worked out, and offered suggestions to the Fairfield Plan on a workable system for fire departments answering calls to fires on or adjacent to the Parkway. He said that in some instances fire departments go into the territory of another company, where access is not available, but in all instances Chiefs have cooperated and agreed that this was necessary for the protection of the motoring public.

Edward Cairns, of Cairns and Brother, makers of fire equipment, was the final speaker of the evening and in a short, instructive talk, demonstrated how firemen's helmets are made. He showed the latest and some of the earlier helmets made by his firm, as well as helmets now in use in Germany, England and France. He also discussed their strength and protection offered.

Welcoming talks were given by First

Selectman George Barrett of the town of Stamford, Harry McKeon, president of the Turn of River Fire Department, and Chief Gerald Shields of the same department. Mr. Barrett discussed firemen's problems at length, and suggested more publicity for fire departments and advised them to start advertising. He also entered into the discussion of ways and means of attaining better results in a legislative way, and his ideas and suggestions were so informative that the Plan meeting voted unanimously to elect him an Honorary Member.

The meeting discussed the Drivers' Liability Bill, and the fact that from present indications volunteer drivers would not be covered by the provisions of the Bill.

The meeting was presided over by Chief Thomas Carroll of Fairfield, President.

A later meeting of the Plan was held at Brookfield Center, Wednesday evening, November 22.

JOHN MOEHRING

Studies in Apparatus Design
Upper, old horse drawn hose wagon; center, an old steamer used at the Boston Fire in 1872 (subsequently tractorized); lower, a hand pumper of the "good old days."

Boston Has Fire Prevention Parade

Boston and many of the outlying towns of the Metropolitan area, observed the beginning of Fire Prevention Week with a parade and a demonstration drill by the department drill team. Outstanding features of the parade were a horse-drawn steamer that served in the great Boston Fire in 1872; a hand-drawn hand pump from North Reading; a six-foot "mammoth" pumper; two 100-foot aerials; three covered wagons of the Boston Protective Department; and a number of floats carrying various slogans and posters.

Fire Station Wins Award

Engine Company No. 69, Chicago, Ill., was awarded first prize for the finest police or fire station lawn in the annual "Save the Lawn" campaign. This campaign is a city-wide beautification plan headed by the Chicago Park Commission. Fire Commissioner Michael J. Corrigan, the donor of the award, made the presentation.

Private Department Is Praised

A privately owned fire department that has held fire losses on its property to $110 this year stands as a strong arm of the Albuquerque, N. M., fire fighters. The Santa Fe Railway Fire Department was organized in 1923; the station was built in 1921. The department averages about six alarms a year. The losses in 1938 were zero.

This department has had a mutual co-operative agreement with the Albuquerque Fire Department for years. Under the agreement, the railway department always moves in to back up the city's forces on the third alarm.

The railway department guards a sector three miles long which is valued at several million dollars. There are alarm boxes, water lines, fire plugs and standpipes. The department makes periodical inspections for fire hazards. The fire station houses a truck, the alarm recording system, a workshop, and quarters for firemen. The department employs three regular drivers, who work on eight-hour shifts, and ten firemen.

Hydrant and Fire Alarm Box Markers

It is sometimes very difficult during the night to discern a hydrant in close proximity to a fire unless it is marked in some way.

Brantford, Ont., has recently installed light yellow lights on electric light standards adjacent to the hydrants. These lights do not detract from the regular street lighting yet at the same time are easily picked out, and saves time in locating hydrants nearest the fire. These poles have also a wide yellow band painted around them so that hydrants can be picked out at quite a distance in the day time. We have found that this has worked to great advantage and the saving of time in laying hose lines to fight a fire.

We have also installed for the public's benefit, a red light with a clear bottom over our fire alarm boxes. The clear bottom on this light does not detract from the amount of light ordinarily thrown on the street by the regular street lighting, and at the same time, the red on the upper portion of the light can be seen at a great distance. There are also red bands painted around these poles, so that they are easily discernible in the day time. One great advantage to this, is that the only cost is the cost of the light bulbs, as they are installed on the regular street lighting poles. The replacing and maintenance of these lights are looked after by the Public Utilities Commission and therefore entails no expenditure of the Fire Department's appropriation.

We have also installed, as part of our equipment, a Universal sprinkler shut-off (in fact we have several of these), and we have made a portable set of sprinklers of different types that we can hook up and demonstrate the shutting off of any individual sprinkler head.

We had our mechanic work on this sprinkler shut-off with the idea of a sprinkler shut-off that would take care of all types of sprinkler heads. After some experimental work, he was able to make a sprinkler shut-off that would do this.

This means that when you have a fire where there is a sprinkler head or heads operating, that the individual head or heads can be shut off without having to shut off the entire sprinkler system. Should a fire break out in some other part of the plant or building, the sprinkler system would still be in operation in that area.

Chief G. E. HUFF,
Brantford, Ont.

Deputy Chief Lardis Retires

Deputy Chief John H. Lardis of the Cambridge, Mass., Fire Department retired recently at the age of seventy. He was appoinetd a call member in 1892, becoming a permanent member in 1895. He was made a Lieutenant in 1908, a Captain in 1910, and Deputy Chief in 1935.

Views of the Telephone Installation at Winnipeg, Showing the Telephone Unit Installed on the Truck Base, and Another Near the Top of the Ladder

Telephone on Aerial Ladder

A telephone unit, manufactured in England, has been installed on an American-LaFrance aerial ladder in service at Winnipeg, Man., by Chief Dan Boulden. It is believed that this is the first unit so equipped on the North American continent.

This equipment makes it possible for a man on top of the ladder to communicate what he sees of the progress of the fire to the ground crew, and to suggest to officers the method of operation.

As the ladder is drawn up or lowered, a drum automatically pays out or winds up the telephone cable. With the trend towards longer ladders, telephonic communication has become more important.

While the telephone unit has been in use in Europe for many years, this is the first time that it is being used here.

3-Alarm Fire Destroys Bakery

A fire which started above the ovens in the bakery of Zinsmaster Breads, Inc., Des Moines, Ia., developed into a three-alarm blaze, which destroyed the three-story brick building. Before the fire was under control, all the city's fire equipment was at the scene.

The fire was noticed coming out around the top of two coke-fire ovens, adjoining a recently installed traveling oven.

Firemanship Hazards

(*Continued from page 577*)

the size of the canister. These limitations of gas masks, however, do not prevent their being used in most of the ordinary situations that come to the attention of the fireman.

The hose mask consists of the regular gas mask with a face-piece attached to a long non-collapsible hose, through which the wearer inhales fresh air. The hose is firmly attached to a safety belt so that a drag on it does not displace the face-piece. The hose mask is not limited as regards the concentration or kind of irrespirable vapors or gas that surround the wearer; it protects against any atmosphere that the skin can endure. It is the simplest and safest type of respiratory protection available. If the hose is over twenty-five feet in length, a rotary blower is used to force air to the wearer.

The oxygen breathing apparatus differs from the gas mask or hose mask in that it carries a supply of pure oxygen for the wearer. This type of apparatus can never be displaced by a gas mask for use in atmospheres deficient in oxygen. The chief advantage of this type of apparatus is that it is completely independent of the atmospheres encountered and can be used in any atmosphere that the skin can endure. The wearer is completely free and can work any place, not being dependent on the length of the hose or an atmosphere with sufficient oxygen. It has the disadvantage of being a complicated piece of apparatus which, for its proper operation, requires frequent inspection and adjustment, also it is cumbersome and heavy. No one should ever attempt to use this particular type of apparatus unless thoroughly trained.

In the Interest of Fire Prevention

Fire Commissioner William A. Rielly, Chief Samuel Pope, Boston, Mass., and Eddie Cantor, Motion Picture and Radio Comedian, take part in Boston's Fire Prevention Day Program.

WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of November, 1939. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending November 30	Loss in Thousands of Dollars
Benicia, Cal.—Several wharves and adj. property	150
Ottawa, Ill.—Serena Community Grammar and High School	60
Edinburg, Tex.—F. W. Woolworth store damaged	50
New Baltimore, Mich.—Plant of Iceolite Corp. damaged	50
Baie Des Sables, Ont.—Church property destroyed	100
Elmwood, Man.—Dwelling at 631 Talbot Ave. damaged	80
Ventura, Cal.—Armory of Battery B, 144 Fd. Artillery, destroyed	70
Kenton, Ohio—Main bldg. of Runkle Candy Co. destroyed	80
Los Angeles, Cal.—Business property on South Broadway	100
Nashville, Tenn.—Stove plant of Gray & Dudley Co. destroyed	125
Leighton, Pa.—Lauchnor Bros. machine shops, East Penn Township	50
Lodi, N. J.—Bldg. of Lodi Chemical Co. destroyed	80
Redwood City, Cal.—1,000 tons of dried fruit in whse. of Pratt-Low Preserving Co.	100
Peoria, Ill.—Bldg. of Mid-West Trading Post	65
West Paris, Me.—Plant of Penley Bros. destroyed	80
Croton Falls, N. Y.—Property of Croton Valley Lumber Co.	65
Greenwood, Va.—Country Store, Inc., damaged	50
Minersville, Pa.—Hotel and adj. business property	50
San Antonio, Tex.—Whses. of Kahn Oil Co.	65
Pomona, Cal.—Fremont Junior High School damaged	60
Berlin, N. H.—Centrally located business property	200
Lowell, Mass.—Varnum Junior High School damaged	100
St. Paul, Minn.—Bldg. of Maendler Brush Mfg. Co. damaged	80
Spokane, Wash.—Armstrong Hotel and adj. business property	80
Adena, Ohio—Dunglen mine tipple of Hanna Coal Co. destroyed	50
Johnstown, Pa.—Planing Mill of W. D. Varner, adj. property	80
Ste. Marguerite, Que.—Alpine Inn in Laurentian Mts.	80
Ritzville, Wash.—Whse. of Ritzville Flour Mills destroyed	80
Columbus, Ohio—Property occupied by Arcodel Bus System and six buses	50
Milan, Tenn.—Business property	50
Canandaigua, N. Y.—J. J. Newburry Co. Store damaged	80
Florence, S. C.—The Carolina Theatre damaged	70
Frankfort, Pa.—Property of Erickson Smelting Co. damaged	125
Glouster, Ohio—Crawford Theatre damaged	50
Chicago, Ill.—Dept. store of Rau & Co. damaged	100
Arlington, Va.—Plant of Washington Building Materials Co.	80
Compton, Cal.—Plant of L. A. Fry Roofing Co.	200
Olivet, Ill.—Administration bldg. of Olivet College destroyed	250
Portland, Me.—Market Street warehouse destroyed	165
Holyoke, Mass.—Rag storage plant of C. Belsky & Co.	50
Hooper, Neb.—Elevator and adj. property of Farmers' Union	50
Philadelphia, Pa.—Whse owned by Alfred Kendrick Co.	60
Pittsburgh, Pa.—Murphy Co. five and ten cent store and adj. property	250
Chicago, Ill.—St. Adolphus Church damaged	65
Des Moines, Iowa—Hangar at Municipal Airport and 19 planes	60
Columbus, Ohio—Barns on farm property of E. E. Turner	50
Kennett Square, Pa.—Pattern whse. of Kennett Foundry & Equpiment Co.	50
Charlestown, Mass.—Three whses. on Rutherford Ave. damaged	80
Winder, Ga.—Plant of National Furniture Co. destroyed	75
National City, Ill.—Exchange bldg. St. Louis National Stock yards, damaged	80
Barre, Vt.—Gordon block in business section	125
Ravenna, Neb.—Mill bldg. owned by Nebraska Consolidated Mills	80
Reading, Pa.—Bldg. of Brighter Furniture Co. destroyed	80
Sioux City, Iowa—Bldg. occupied by Vigen Motor Co. damaged	65
Fredericton, N. B.—Bldgs. at Fredericton Exhibition, now used as artillery quarters	65
Des Moines, Iowa—Whse. of Des Moines Bottling Co. damaged	50
Martinez, Cal.—Martinez Hotel damaged	125
Los Angeles, Cal.—Store of L. Rifkin & Son	50
Trenton Fla.—Property in business section	65
Carlisle, Pa.—Comerford Theatre and adj. apt. bldg.	50

Fire Greater Hazard Than War

War danger to American cities is small as compared with the ever-present threat of fire, State Fire Marshal Sherwood Brockwell told a crowd of 150 at the Morganton Fire department's annual banquet.

Less than fifteen American cities have been destroyed by war, he said, but there is not a single city of 100,000 population or over which has not had at least one million-dollar fire.

Mr. Brockwell spoke on the dangers of transporting gasoline through streets of towns and cities, citing the fact that seven gasoline trucks have been destroyed by fire in North Carolina since October 12.

Mr. Brockwell, disclaiming that he had any remedy to offer, said not to rely on the advice of so-called experts from the outside "but to settle for yourselves what is needed to handle the situation."

"All of us," he said, "are thinking about war. We can't help it. War is a horrible thing, but there are other things just as horrible. Not from bombing planes or a military invasion is the greatest threat to our cities," the speaker declared. "One can't imagine women and children getting their feet burned off in war, and yet it could easily happen on the streets of Morganton if gasoline tank trucks should crash in the business district. You could have a half-million dollar fire before firemen could even reach the scene," he declared.

D. G. SPENCER.

THE 34TH.
FIRE FACTS
BY OTIS SMITH
CAPT. DANIEL G. AID
CAPT. JOSEPH F. ACOSTA
FIRE CAPTAIN "DOUBLES"
JACKSONVILLE, FLA.
PERFORMED BY HORACE BARKER SPRINGFIELD, MASS.
PERFECT FIRE STREAM
1¼" STREAM AT 240 POUNDS N.P. PRODUCED FROM A 3-WAY GUN. HIGH PRESSURE 1¼" TIP WHICH WAS STANDARD 2½" HOSE THREAD AT THE BUTT.
FIRE FACTS IS OPEN TO CONTRIBUTIONS
THANKS TO MR. C.F. CALLAHAN BOSTON, MASS.
GROTON, MASS.-JULY 26, 1795. WHEN THE MEETING HOUSE WAS STRUCK BY LIGHTNING, FIRE FIGHTERS TURNED TO A NEARBY DAIRY FOR HELP, AS IT WAS BELIEVED THAT WATER WAS OF NO VALUE ON A FIRE STARTED BY LIGHTNING.
CAUTION SHOULD BE OBSERVED IN THE USE OF CHIMNEY CLEANING POWDERS. THE MATERIALS MAY CONSIST OF SALT OR POTASSIUM CHLORATE. UNDER CERTAIN CONDITIONS SOME OXIDIZING MATERIALS, PARTICULARLY POTASSIUM CHLORATE, MAY CAUSE AN EXPLOSION.

LOW-HEAD, REGULATION TYPE— IN HEAVY OR MEDIUM WEIGHT

CAIRNS

SERVICE HELMETS

Top grain leather, specially processed to give toughness and heat resistance; strong without excessive weight; reinforced to maintain head shape; the strongest, most durable helmet made today. The Cairns Cushion Lining is self-adjusting, comfortable, grips the head, gives real shock protection. Write for catalog No. 229, describing the Cairns Quality Line of firemen's equipment.

CAIRNS & BROTHER
444 LAFAYETTE ST.
NEW YORK

DROP-BRIM TYPE

COMPLETE OUTFIT
$21.45

Here's an outfit of the finest materials and workmanship at a price that should interest every fireman. For all-season use, it provides the maximum in comfort and protection.

MIDWESTERN

Firemen's Coat and Bunker Pants

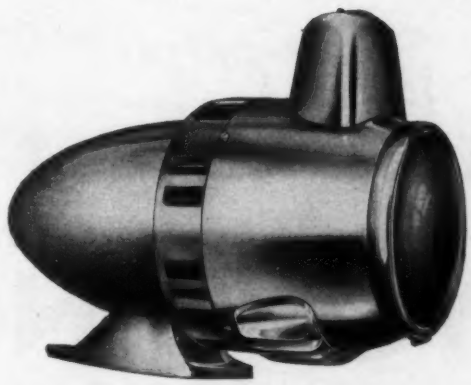
Combination Suit No. 101

Both coat and pants have removable wool linings and are equipped with the celebrated Midwestern safety snaps . . . can't possibly catch on anything. Pants in any size and coats up to 35 in. in length. Two outside pockets in the coat with snap fasteners. Flexible, elastic inner sleeves that keep out water, cold and sparks. Collar is of corduroy. Pants have cloth crotch pads for pole sliding. Many other exclusive Midwestern features that have made this outfit popular with particular firemen. Order yours today.

All garments Union Made AFL.

MIDWESTERN MFG. CO.
Mackinaw, Illinois

SAFETY
IS MORE VITAL THAN
SPEED
and both are
NECESSARY
for
Efficient — Successful
FIRE DEPARTMENT OPERATION



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with a **FEDERAL**
TRAFFIK-KING
Combination Siren and Oscillating Light

ASK FOR BULLETIN NUMBER 64

FEDERAL ELECTRIC CO.
8702 SOUTH STATE STREET CHICAGO, ILLINOIS

UTILITY EQUIPMENT FOR ANY FIRE DEPARTMENT

● This comparatively inexpensive unit "fills in" in many important ways to make any fire department, large or small, better able to do its work.

Within its capacity—150 G.P.M. at 100 lbs. pressure—it will do any work required. Readily attached to any passenger car, it will negotiate many roads which a heavy pumper cannot travel. For outlying or farm fires it is therefore ideal.

Also, you will find it useful for dewatering basements or other "clean-up" work after fires or in other emergencies. The self-priming centrifugal pump cannot clog and is not harmed by dirty water.

Full details will be supplied on request.

LABOUR FIRE TRAILER

THE LaBOUR CO., Inc. • Elkhart, Indiana, U. S. A.

This is the Time of Year I Can Help You the Most—says the E & J RESUSCITATOR, INHALATOR and ASPIRATOR *combination.*

During the winter months when asphyxia generally takes its largest toll of lives, the most modern and effective equipment should be at your disposal.

Medically accepted, the E & J has over the past 11 years, been the means of restoring respiration to many thousands of people overcome by asphyxia.

Without obligation, nearest district representative will gladly demonstrate this unique life-saving device to your Department.

In New York, write the E & J Resuscitator Company, Inc., 17 East 42nd St., and in New England, the E & J Resuscitator Company, Inc., 581 Boylston Street, Boston, Mass.

E & J Manufacturing Co., Glendale, Cal.

Just Published—NEW—Up-to-the-Minute!

YOUR INCOME TAX

HOW TO KEEP IT DOWN

IMPORTANT

For first time municipal and state employees are subject to the Federal Income Tax.

1. By knowing each and every deduction to which you are justly entitled.
2. By learning how to prepare your income tax return *quickly and correctly* . . . thus avoiding future assessments, penalties and interest charges.

THIS BOOK INCLUDES

Check Lists of exemptions and deductions,

to make sure you overlook nothing to which you are justly entitled.

It contains:

108 Items Which You May Exclude from Your Gross Income.
46 Different Taxes Deductible by an Individual.
31 Types of Charitable Contributions Which Have Been Approved as Deductions.
193 Deductions Which May Be Made by Owners of Businesses, Partnerships, or Corporations.
80 Deductions Which May Be Made by Professional Men and Women, including Physicians, Lawyers, Dentists, Architects, Engineers, etc.
101 Deductions Which May Be Made by Actors, Artists, Musicians, Writers, Others in Similar Occupations.
60 Deductions Which May Be Made by Salaried Men and Women.

AND—a special complete section on N. Y. State Income Tax.

"Your Income Tax," by J. K. Lasser, C.P.A., is new, completely up-to-date, covers every Federal income tax requirement and *every change of the past two years.* Written in simple, untechnical language, it is the quickest and most accurate help ever devised for income tax payers.

This book will save a great deal of your time, enable you to keep your tax down, and avoid the trouble of later assessments. We offer it on this double guarantee: 1. Look through it. If you do not agree it will be of definite help—return it, your money will be refunded. 2. OR—*after* you have made out your return with this book's help, if it has not actually saved you time and money, return it then, we will refund its full price to you.

Published by Simon & Schuster, Inc., this book is now being distributed, at regular list price, by Case-Shepperd-Mann Pub. Corp., publishers of FIRE ENGINEERING.

PRICE

$1.00

Completely indexed—with quick guide to each and every line in your tax blank.

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Blast Wrecks Cleaning Establishment

Two terrific explosions of high volatile cleaning fluid fumes shattered a cleaning store and a sandwich shop in the Gramercy Park Cinema Building on East Twenty-third Street, New York City.

The force of the explosion was so great that it threw a 500-pound pressing machine through the wall of the cleaning shop into the restaurant next door. The blast caused the balcony of the theatre to sag about four inches. Windows for nearly a block were broken and a large plank was hurled into the side of an auto parked thirty-five feet away.

Although three were dead and about twenty-four injured, the results would have been far worse had the explosion occurred about twenty minutes later. At that time the streets would have been crowded with lunch hour throngs from nearby office buildings.

Among the rescue units to respond was the newly organized "disaster unit" of Bellevue Hospital. This detail consisted of thirty internes and eleven nurses.

Just After the Explosion of Volatile Fumes

Combined Fire and Police Station

A central fire house, which also houses the Police Department, has recently been placed in service in Greenwich, Conn. The design of Joseph W. Bailey, local architect, was selected from fourteen designs submitted in competition. The cost of the building was $304,155, for which the city received a PWA grant of $119,250.

The building is 122 by 115 feet and is three stories high. It is of steel and concrete construction. The exterior walls are faced with limestone and trimmed with Minnesota granite.

On the first floor are the apparatus room, Chief's office, Captain's office, watch room, toilet, stock room, clothes drying room, store room, hose storage room, repair shop, hose drying tower, fire alarm headquarters and battery room.

The apparatus room has four overhead doors. It houses a 1,000-gallon Seagrave pumper, a 750-gallon Seagrave pumper, a 500-gallon International pumper, a 85-foot American-LaFrance aerial ladder, a Seagrave city service truck, a Studebaker squad car and an Oldsmobile Chief's car equipped with two-way radio. At convenient outlets, there are battery charging circuits, power circuits, hot and cold water, and exhaust ventilators.

On the second floor are the Chief's room, Captain's room, dormitory to house twenty men, lock room, shower and toilet, linen room, store room, and two volunteer company rooms.

On the third floor are two social rooms, divided by a folding partition, dining room, kitchen, pantry and toilets.

The roof has been fixed up for recreation with a storage room for recreation equipment.

Combined Fire and Police Building at Greenwich, Conn.

Operating High Pressure Valves

Until recently the work of opening and closing the gate valves on the pipe line system of San Francisco's high pressure fire protection project was a long hard job for two firemen, but since the completion by Mr. Birmingham, Superintendent of the Fire Department's Corporation Yards, of a power operated gate opening and closing equipment, this work is now play for one fireman.

The device consists of an overhanging gear which is arranged on a swivel attached to the bed of a Ford truck in such a manner that it may be swung to the right or left to project out over the opening of any underground structure in which a gate valve is installed. When the apparatus has been placed in position over the manhole, a heavy rod sliding up and down in the gear driven by the car motor, is lowered down onto the operating stem of the gate valve, and a thumbscrew tightened which holds the rod or "key" tightly engaged with the valve.

Then the special shift lever installed at the side of the truck, within easy reach of the operator, is used to engage the driving apparatus with the truck motor. The rod extending down through the manhole and engaging the valve is driven rapidly or slowly. It will open or close the largest gate valves in a few minutes, an operation that formerly required a half hour by hand power.

There is a lever for raising the seven-foot driving rod up off the valve. There is absolutely no vibration and the device will not spin a valve.

When the valve has been opened or closed, the seven-foot rod is raised sufficient so that it will clear the edge of the truck bed and the entire apparatus is swung back over the truck bed and locked in a rigid position. The truck is ready to be driven to the next point where it is to be used.

The success of this device has been so pronounced that it is planned to build additional similar equipment.

C. W. Geiger.

COMMUNICATIONS SYSTEM OF THE JAY W. STEVENS DISASTER UNIT

Antenna of Radio Equipment Raised by Compressed Air-Car Carries Portable Transmitter and Receiving Set

RAPID communication is one of the most vital and necessary adjuncts to our modern civilization. Help could be within a few miles from victims of tragedy, and without communication, their plight would not be known.

Let us assume for instance a disaster has occurred, where a number of people are killed and/or are injured, or where property and life are threatened, whether it be an explosion, earthquake, fire, train wreck or flood.

Help is needed. Emergency services arrive at the scene. Time is an important factor. Outside help and equipment are needed, help already on the scene has to be directed, and co-ordinated so as to be effective. Communication is vital.

Speaking Into the Microphone of the Disaster Unit

The communication equipment has been designed and constructed by the Alarm Division of the Portland Fire Department. It has been built for the utmost flexibility, practicability, and ruggedness possible within the space available.

It consists of several units. The main power amplifier has an audio output in excess of two hundred watts, with very little distortion.

This basic unit is housed in a rugged steel rack mounted and cushioned with heavy rubber. It may be used to amplify the output of the radio receiver, microphones, or telephone. The output is primarily used to supply energy to the loudspeaker and the radio transmitter.

The loudspeaker, developed by the Fire Bureau, is an original design, consisting of a quadruple driving unit, with a continuous, undistorted output of 120 watts of audio power, feeding a very compact directional horn. This horn, being equal to four of the conventional heavy duty six foot trumpets, is mounted complete in a 50-inch circle, by 14 inches depth. When driving, the entire speaker assembly is dropped down flush with the top of the car. When raised, it can be turned in any direction and tilted to any elevation. In this way, the sound may be directed to any desired point, such as the top floors of a building, or to a ship on the water. While complete tests have not been made with this speaker, it is known that intelligible speech may be transmitted approximately two miles in the open.

Sending Set

The radio transmitter operates on an ultra high frequency, with an input power rating of 100 watts. It may be fed from any of the microphones, telephone line or radio receiver. It will normally be used for communication with the police radio system and the small portable transmitter carried by this car. In emergencies, communication with other services such as government agencies and radio amateurs, can be carried on. While the range is a variable factor, dependent on many conditions, it will give satisfactory results over a distance of 50 miles, under any ordinary conditions.

The antenna is raised by compressed air, when it is desired to use the radio equipment, and is then dropped down out of the way when the car is "running."

The radio receiver is a high grade communications type, which will tune to all frequencies between 520 and 40,000 kilocycles (575 to 7.5 meters), which range includes the broadcast band and all police frequencies.

Portable Receiver

The portable receiver and transmitter is a waterproof "Pack Set" weighing 17.5 pounds complete, ready for operation with a water-proofed telephone handset, or a special gas mask, with a built in telephone receiver and transmitter may be used. No tuning is necessary on this unit, the operator merely pushes one button to receive and another to transmit.

Both the transmitter and receiver are tuned to the same frequency as the car. The transmitter is crystal controlled, the same as large units. The tuning controls are locked and entirely covered up with a protecting plate over the top of the case.

While this unit is primarily intended for working from inside of burning buildings, etc., to the outside, or over the loudspeaker, it has been heard for a distance of 15 miles.

In addition to the main radio receiver, a special "police receiver" is installed operating from the car battery, on an independent antenna. This unit is tuned to the Oregon Municipal Police Frequency and may be operated independently at any time.

Microphone

Microphone equipment consists of one microphone, mounted on a flexible arm inside of the car, one microphone mounted on a combination stand, one hand microphone, one telephone handset, and 400 feet of flexible microphone cable in various lengths. The external microphones are plugged-in on either side of the car. Direct communication may be carried on through the radio with the fire alarm office by plugging the cable into any fire alarm box, or any phone line may be plugged into either side of the car.

A carefully chosen kit of accessories, such as headphones, spare microphone, telegraph key, and spare tubes complete the equipment.

The amplifying and radio equipment operate from any standard 110-volt A. C. power line, or from either of two gasoline driven generators located within the car.

This unit was christened at the I.A.F.C. convention at San Francisco.

Industrial Fire Problems

The Industrial Fire Prevention Association of Wilmington, Del., meets the first Thursday of each month in Fire Statiop No. 1, Wilmington, to discuss industrial fire problems.

The membership of sixty persons consists of watchmen, janitors, chiefs of the various industrial plants, and safety men.

During Fire Prevention Week, a public meeting is held at the Wilmington Public Library, and a guest speaker is obtained. At the last such meeting T. Alfred Fleming spoke, and the attendance was 250.

New 100-Foot Power Operated Aerial Truck for Washington

Above is shown the new 100-foot power operated aerial ladder truck recently delivered to Washington, D. C., by Peter Pirsch & Sons Co., of Kenosha, Wis. The job is equipped with an aluminum alloy aerial ladder, hydro-mechanically operated.

AMERICAN-MARSH PUMPS

For Midship Mounting—Specify

BARTON-AMERICAN

Duplex Multistage Centrifugal

FIRE APPARATUS PUMP

This pump has no equal for HIGH PRESSURES and LARGE CAPACITIES at SLOW MOTOR SPEED.

For Front Mounting—Specify

BARTON

Geared Centrifugal Pump

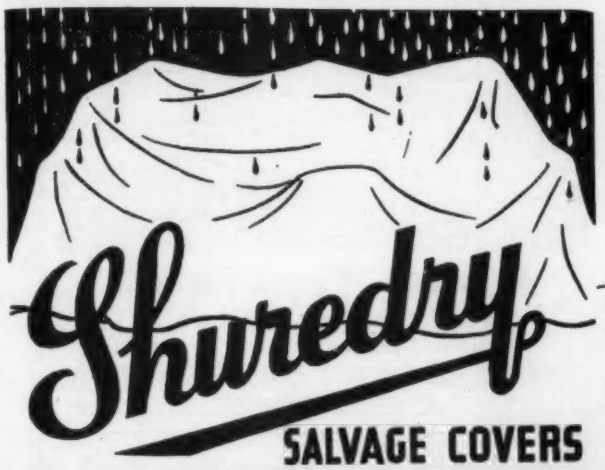
These pumps stand alone in their class where LIGHT WEIGHT, CONVENIENCE IN OPERATION and DEPENDABLE SERVICE are desired at LOW COST.

AMERICAN-MARSH PUMPS INC.

Battle Creek, Michigan

World's Largest Pump Manufacturers Making Fire Apparatus Pumps

Pumps and Pumps Only Since 1873



Shuredry

SALVAGE COVERS

Reduce WATER DAMAGE & INSURANCE RATES

Progressive Fire Chiefs everywhere recognize the necessity of improved salvage work if they are to better their records. Shuredry Salvage Covers have been used to illustrate salvage talks by leading Fire Chiefs at many conventions. They have been recommended by these practical men in service for dependability, efficiency and real economy to the department. Easy to handle and to spread, they will not crack when folded or stored. They do not sweat and are chemically treated against mildew.

Write for samples and prices.

Fulton Bag & Cotton Mills

Manufacturers Since 1870

ATLANTA ST. LOUIS DALLAS

MINNEAPOLIS NEW YORK NEW ORLEANS KANSAS CITY, KAN

FIRE HOSE

works

ALL the Time

Aided by Republic's exclusive "Provar Process"

● The useful life of Fire Hose depends upon its capacity to work 24 hours every day . . . absorbing the punishment of fire fighting when in use and resisting attacks of mildew and rot while in storage. Selection of materials and construction of Republic Fire Hose are determined by the highest standards of flexibility, wear-resistance and strength for actual service. Exclusive Provar Process offers a permanent safeguard during storage against the destructive action of mildew, rot and other natural enemies of cotton hose jackets. For increased dependability and longer hose life, order Republic Fire Hose. Republic Rubber Division of Lee Rubber and Tire Corp., Youngstown, Ohio.

REPUBLIC RUBBER

YOUR BADGE OF HONOR

Something more than a decoration . . . an insignia of courage and unselfish devotion to duty. That badge should be worthy of its place on your uniform . . . let it radiate quality and your pride in wearing it. BRAXMAR has been making badges for more than 60 years.

C. G. BRAXMAR CO., 242 West 55th Street, New York

BRAXMAR BADGES

Standard for Over Sixty Years

WATEROUS FIRE PUMPS

CENTRIFUGAL ROTARY

ESTABLISHED 1886

WATEROUS COMPANY - ST. PAUL

COVER'S NOD and SHAKE SMOKE MASK

Carry It in Pocket. Slip on in a Jiffy. Positive Protection to Eyes Against Smoke and saves the lungs.

Why get sick?

Price $48 per Dozen

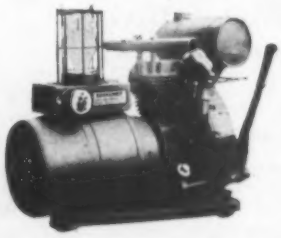
Upon receipt of $4.00 one will be forwarded as a sample, postpaid.

H. S. COVER
Station A. SOUTH BEND, IND.

FLOODLIGHT with KATOLIGHT

portable light plants, 4 cycle, 600 watts, 60-cycle AC 110-volts. Also charge 6-volt battery from same plant. Runs electric drills, saws, etc.

Sizes 350 to 10,000 Watts



Write to

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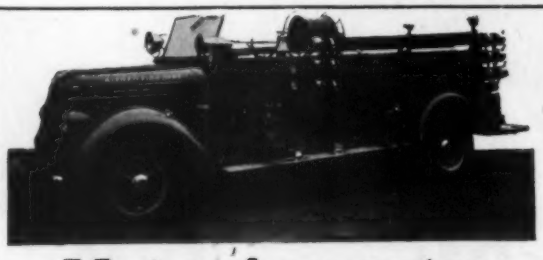
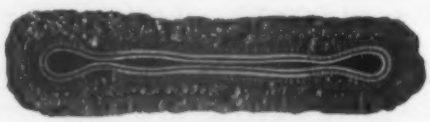
105 ELM STREET
MANKATO, MINN.

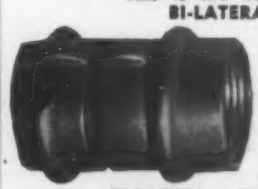


Motor Apparatus

Pumps • Fire Appliances
Automatic Fire Alarm Systems
The SEALAND CORPORATION
Bridgeport, Connecticut



This is the new LIGHT WEIGHT BI-LATERAL FIRE HOSE



This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20c to 30c per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

BI-LATERAL FIRE HOSE COMPANY
20 N. Wacker Drive Chicago, Illinois

Valuable Information

All the manufacturers you will find represented in our advertising pages have interesting and valuable data about their equipment which is yours for the asking. When writing, be sure to mention FIRE ENGINEERING.

By William Paul Babcock

Do Unto Others as You Would Have Them Do Unto You

This Bible quotation is especially fitting at this time of the year, and is inspired by a group of volunteer firemen not far from my home town, in recognition of the magnanimous reciprocal courtesies extended me by them. It is always a pleasure to be of service to my fellow volunteers and I never have sought any direct recompense therefor.

* * *

Well, it is interesting to reflect that as sure as shootin', each time I dash off "copy" for the current isue, I sit back and say, to myself, "Gee, I wonder what-'n'ell I'll write about next month". Then presto!, out of the blue comes a nice letter from some regular fellow who admits he reads and likes this stuff and gives me a story or a clue to one. Or I meet some chap during my travels and he tells me how the boys back home like reading it, and promises to get his Chief to send in stories about what they are doing. In the latter way, I learn that Chief Everett B. Price of Dewitt, N. Y., is doing a good job of salvage, and I'm serving him notice herewith that if he doesn't sit right down and write me full details, I'll put the *bee* on him. So there!

But the best contribution this month comes from Chief G. P. Ryder, of St. Stephen, N. B., enclosing a very neat brochure on the work and history of his neighbor, the Salvage Corps and Fire Police of St. John, N. B. The book was issued in commemoration of the corps fiftieth anniversary, in 1932.

(Off the record, fellows, don't you sympathize with me, having to wait seven long years to write this? Take due notice thereof and govern yourselves accordingly!)

A transcript from the articles of incorporation of "No. 1 Company," relates that they had "full authority when accompanied by a Justice of the Peace to enter any house . . . and search for . . . articles stolen or suspected of being stolen . . . and if necessary to arrest," etc., etc. Three years later an amendment was made amplifying their duties by the operation of "fire lines." As was the experience with the Nyack outfit, our Canadian brethren evidently did not relish the police duty and it is related that the organization dwindled until it practically ceased to exist.

Came the big fire of June, 1877, and the need of this body was clearly demonstrated, whereupon it was revived. In the booklet, the author bemoans the fact that although they have been serving their public fifty years, many of their beneficiaries seem not to appreciate that it is a purely voluntary service. Thus it appears that no matter what land you are in, the public will often take whatever you are willing to give them, gratis, and let it go at that, not caring much how come.

Being independent of the official fire brigade, they received no benefit from the Firemen's Relief Association. Yes, and Nyack went through all that.

Upon their anniversary, they had forty members, which was the limit under the city law. Officers were Captain, Lieutenant, Secretary, Treasurer and four "Foremen."

Their first regular meeting was held on Monday, November 6, 1882 and they have met regularly each month on the first Monday, ever since.

That they had more official recognition than many other similar outfits is indicated by the fact that new members were "sworn in by the Common Council" and received a "warrant" citing their duties, as well as privileges.

Formation of Organization

Credit for the organization's formation is given to A. Chipman Smith, former Chief of the Fire Department and Mayor, and to John Kerr, who succeeded Mr. Smith as Chief. Meetings were held in No. 2 Engine's quarters in Sydney St. for a short time, but later in the McLaughlin Building, until completion of No. 3 Engine's quarters in 1890, where they have continued to meet since that time. It is further of interest that at the time of this publication, of the original Charter Members, only one Charles A. Clarke, an ex-Captain, had retained his active membership, although Sterling B. Lordly was a close second with forty-nine years service. Photographs of their old horse-drawn cart and of their more modern motorized unit are shown.

It does not appear from the record, how, when, or to what extent, salvage covers were introduced or are now employed, and as this story must be in the hands of Ye Editor before December 1, I promise to continue it in our next issue.

Just as well anyway, for I have some very interesting bits of news from other parts of the globe.

Beginning with Boston, I learn that my very good friend Capt. Abbott has long since retired from service in the Protectives, but trust him to find a way to keep himself near the old outfit, for 'tis said he is just across the street from No. 1's new quarters.

And recently there was somewhat of a reorganization in the make-up of the Protectives, wherewith, as of November 9, 1939, the office of Superintendent and Deputy Superintendent were abolished and the office of Chief created (I am not clear on whether he gets a Deputy Chief or not but I hope he doesn't have to work 24 out of 24.) Former Superintendent Gooding has resumed his former duties as Secretary-Treasurer of the Department and Deputy Superintendent Bowers is the new Chief.

Hail to the Chief!

And down here in Little Ole New York, Superintendent Espy took advantage of Armistice Day to get himself some severely strained ligaments in the line of duty, so that Cap'n. Bill Cashman is holding down two chairs or desks or somet'n temporarily, with a side line of conducting the Salvage School, outside of which he has nothing much to do.

Recent attendants at the New York Fire Patrol School were the boys from Chappaqua, N. Y., and Sound Beach, Conn. The latter liked it so well they have returned for two extra helpings, thank you.

To the many kind lads who have contributed so generously to this column, to the officers and members of the New Jersey State First Aid Council, my recent general and bountiful hosts, and to the greater number who have endured this department these many moons, all of whom have thereby brought to me such great pleasure, I can, at this time think of no improvement over the time-honored, but never more sincerely uttered wishes for their enjoyment of a

"MERRY CHRISTMAS and HAPPY NEW YEAR!"

Mat Collins Dead

M. H. Collins, Sales Manager, Louisville branch, Rensselaer Valve Company, died at Louisville, Ky., on November 15. He suffered a serious attack about the middle of October, but was reported to be improving at the time the Southwest Section convention was held at Dallas.

The Late M. H. Collins

Mr. Collins was in his early seventies, and joined the Rensselaer Valve Company organization on January 14, 1909. His work brought him in contact with many in the fire field who became his loyal friends. He attended practically every I.A.F.C. meeting that occurred within the territory under his jurisdiction as well as many in other parts of the United States.

Firemen's Pension Upheld

Post session of the Arkansas Legislature enacted a law whereby a tax, not to exceed one and one half mills, may be voted by communities to apply on pension funds.

The five-eighths millage for firemen was contested by an injunction and the court ruled in favor of the department. It was held that the present conditions could not be compared with the past, and that firemen and policemen should have the right to look forward to a suitable pension, after giving the best years of their life to public service.

Manufacturers' Announcements

O'Neill Heads American-LaFrance

At a special meeting of the Board of Directors of the American-LaFrance-Foamite Corporation, Edward E. O'Neill was elected President, and William M. Cooper was elected to the Board of Directors, Vice-President, and Comptroller.

Mr. ONeill has been Vice-President and Director of the Company since 1936,

Edward E. O'Neill

and has been associated with the business for the past twenty-four years.

Starting as a salesman for the company, Mr. O'Neill organized and managed the first Foamite Company in the Great Lakes Region, later known as the Fire Protection Corporation. When this was absorbed by American-LaFrance-Foamite, O'Neill was placed in charge of Fire Protection Equipment sales. In 1935 he was made General Sales Manager of the Company, and in 1936 he was elected Vice-President.

Mr. Cooper was with the American Sales Book Company where he served as credit man, sales promotion, and advertising manager, and in 1934 he was director of market research. During the past four years, Mr. Cooper has been connected with the firm of Stevenson, Jordan & Harrison, Management Engineers, New York City.

Five Months Old Strike Ended

A five-month old strike of CIO rubber workers against the American Rubber Manufacturing Company's Emeryville plant, Emeryville, Cal., terminated recently with the ratification of a new contract. The new contract is substantially the same as the old one, but includes a preferential hiring clause.

"Ultralite" Portable Lights

The Kerotest Manufacturing Company, Pittsburgh, Pa., has issued a pamphlet containing information of the Kerotest "Ultralite" Fire Department portable lights. Illustrations are given showing the various uses of the light and also the ease with which the light and its energy supply may be carried. The Ultralite outfit is furnished with colored lens for special use.

Treatment for Burns

Treatment of burns with tannic acid, a method preferred by many physicians and hospitals, has been made available in new form for use in first-aid work by the Davis Emergency Equipment Company, 55 Van Dam Street, New York City. The Davis preparation, which is known as "Tannoid," consists of a water soluble jelly containing the proper amount of tannic acid. When it is applied to a burn, it is claimed to relieve the pain, lessen the toxic effect, and reduce the formation of scar tissue. The preparation is spread on the burn from the tube and covered with a compress. Tannoid is non-freezing and can be used on service trucks in field work.

Air Raid Alarm Systems

A twenty-page illustrated booklet on air raid alarm systems has just been issued by The Gamewell Company, of Newton Upper Falls, Mass. The booklet, which makes a very fine presentation of the subject, describes the application of Gamewell diaphone compressed air horns to signalling systems for warning of impending air raids. It is fully illustrated by photographs and diagrams.

Col. William De Rohan Dies

Colonel William DeRohan, Chicago District Manager of the Ahrens-Fox Fire Engine Company, Cincinnati, Ohio, passed away recently. During the last few months, he was recovering from an injury resulting from a fall, and apparently was getting along as well as could be expected. For a number of years Col. DeRohan was the field engineer for the National Board of Fire Underwriters working out of the Chicago office.

Aluminum Ladders

A new twenty-four page catalog, illustrating and describing many types of aluminum ladders suitable for fire fighting, has just been issued by the Aluminum Ladder Co., 200 Adams Street, Tarentum, Pa. Also described are various types of step ladders and useful suggestions for cleaning, painting, and repairing around the firehouse.

Safety Clothing

The Industrial Gloves Company, 701 Garfield Boulevard, Danville, Ill., has issued a pamphlet describing a few of their many lines of safety clothing. Some of the products described are gloves, leggings, arm protectors, aprons, and welder's wearing apparel.

Walter Kidde & Company Expands

A new engineering building is under construction for Walter Kidde & Company, makers of carbon dioxide fire extinguishing equipment. The building will be located on the Company's manufacturing site at West and Race Streets, Bloomfield, N. J. The new structure is to be used for engineering and research purposes exclusively.

Unusual features of the new building include two fireproof record vaults, which are protected by built-in automatic carbon dioxide systems. Each floor is protected by portable carbon dioxide extinguishers.

Robert T. Taylor Dead

Robert T. Taylor, sales representative of the Eureka Fire Hose Division, United States Rubber Company, New York City, died suddenly while in Starkville, Miss., on business.

Mr. Taylor was born in 1882 in Weakley County, Ky., and educated at old McFerrin college and at Vanderbilt University. He entered the employ of the Eureka Fire Hose Company in 1925 and served continuously with the company until his death.

Mr. Taylor is survived by his widow, one daughter, and a son, W. L. Taylor, who is a sales representative for the company.

Ahrens-Fox Office Moved

The Ahrens-Fox Fire Engine Company have announced the removal of the New England District Office and Service Station from Taunton, Mass., to 173 Second Street, Cambridge, Mass. The change was made to secure the advantages of a more central location.

New E. & J. Distributor

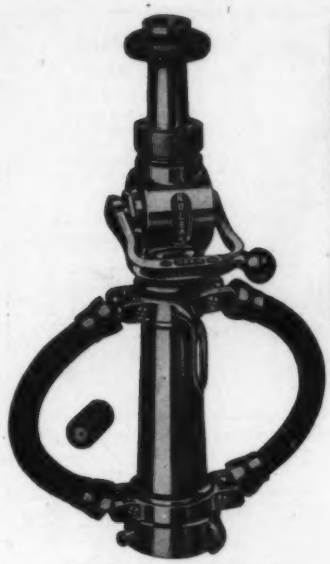
Henceforth, all of the products of the E & J Manufacturing Company, Glendale, Cal., will be handled by the E & J Resuscitator Company, 17 E. 42nd Street, New York. The products include the E & J Resuscitator, Inhaler, and Aspirator. The new company has the exclusive distribution rights for the New England states, New York, and northern New Jersey. An office has also been opened at 581 Boyleston Street, Boston, Mass., with Thane McInnes as manager.

Lavery Chief at Burlington, Vt.

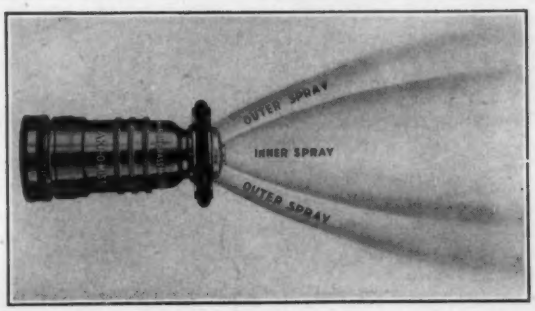
The Fire Commissioners of Burlington, Vt., recently appointed C. N. Lavery as Chief of the department to replace the retiring Chief William E. Carty, who in turn succeeded Chief Carl Stockwell.

Chief Lavery joined the department in October, 1917, as a call man, becoming a regular in 1924. After he had completed a regular course at the Boston Fire Department Drill School, he was promoted to the rank of Captain and Drillmaster of the department. Last spring he was promoted to Second Assistant Chief and then First Assistant Chief. The Fire Commissioners have made a ruling that all officers appointed hereafter will be by written examinations. The first examination will be for Captain.

There has been a Fire Prevention Bureau formed in the department, consisting of the Captains under the direction of the Second Assistant Chief. All of the buildings in the city are to be given a thorough inspection, and already many hazards are being cleaned up. In conjunction with this Bureau, the department dispatches a fireman each morning through all the back alleys of the main section of the city. This affords the Chief a very close check at all times on the existing conditions.



No Leak Nozzle and Playpipe



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(Western Distributor)
Western Fire Equipment Co., San Francisco, Calif.

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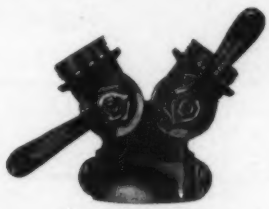

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Every Hale Fire Pump meets exacting tests before it leaves our factory.

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Write today for the Catalog and Folders on the complete line of Hale Pumps.

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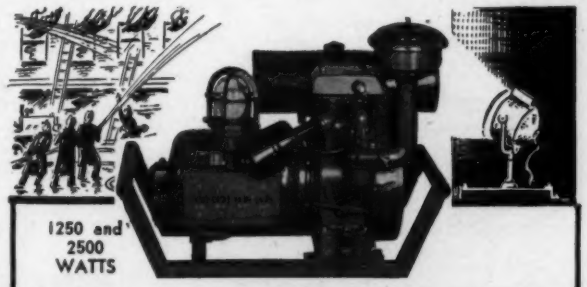

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This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅝" bore x 2⅝" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size, same design.

We are builders of the world's most complete line of Electric Plants. In all parts of the world —arctic expeditions or tropical plantations — U. S. plants have proved their steadfast dependability. And the reason: "U. S." generating sets are designed to meet the conditions under which they will operate.

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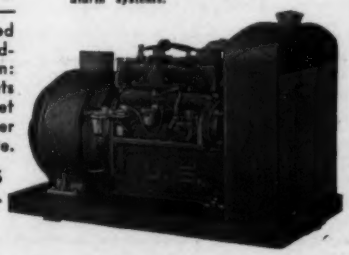
Larger sizes are available. Illustration below is 5 KW 4-cylinder Portable Unit. Automatic remote control. Write for complete information.

Also automatic emergency units for alarm systems.



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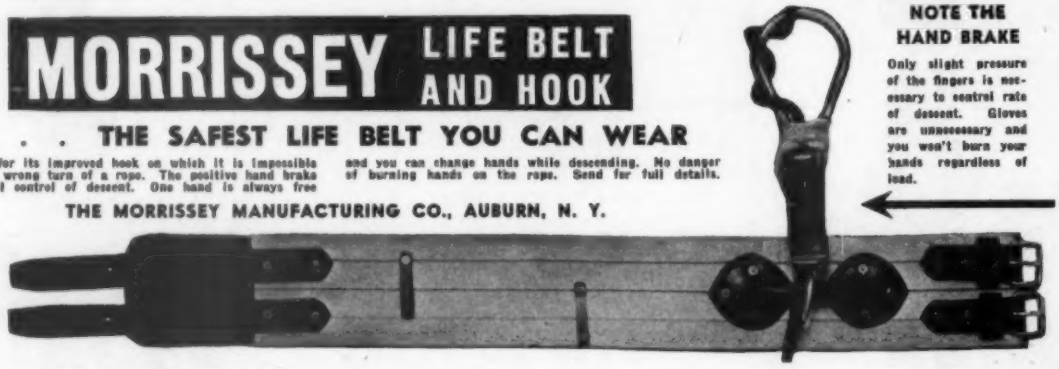
. . . . THE SAFEST LIFE BELT YOU CAN WEAR

Famous for its improved hook on which it is impossible to get a wrong turn of a rope. The positive hand brake gives full control of descent. One hand is always free and you can change hands while descending. No danger of burning hands on the rope. Send for full details.

THE MORRISSEY MANUFACTURING CO., AUBURN, N. Y.



NOTE THE HAND BRAKE

Only slight pressure of the fingers is necessary to control rate of descent. Gloves are unnecessary and you won't burn your hands regardless of load.

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Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

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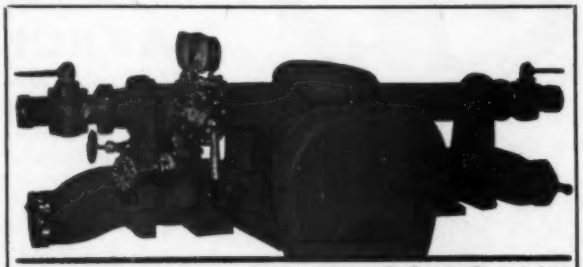

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Convention Dates

*Dec. 27—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Monthly meeting, Nichols, Conn. Secretary, John Moehring, Toms Road, Stamford, Conn.

Jan., 1940—NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. Date and place of quarterly meeting was fixed. Secretary, Fred Trowbridge, Morristown, N. J.

*Jan. 1940—FIRE CHIEFS OF MAINE. Quarterly meeting at Pittsfield, Me. Secretary-Treasurer, Charles W. Bowker, South Paris, Me.

*Jan. 1940—CALIFORNIA FIRE CHIEFS' CONFERENCE. Semi-yearly meeting at San Diego, Cal., exact date to be announced later. Secretary-Treasurer, Chief A. H. Lankford, Glendale, Cal.

*Jan. 7, 1940—UTAH STATE FIREMEN'S ASSOCIATION. Meeting of Board of Directors at Bingham Canyon, Utah. Secretary, John J. Creedon, Bingham Canyon, Utah.

*Feb. 28—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Monthly meeting, Glenbrook, Conn. Secretary, John Moehring, Toms Road, Stamford, Conn.

Feb. 28, 1940—CENTRAL WESTERN (OHIO) FIREMEN'S ASSOCIATION. Bi-monthly meeting, Southern Hills, Dayton, Ohio. Secretary, Roger C. O'Donnell, Covington, Ohio.

*April, 1940—FIRE CHIEFS OF MAINE. Quarterly meeting at Scarboro, Me. Secretary-Treasurer, Charles W. Bowker, South Paris, Me.

April, 1940—FLORIDA STATE FIREMEN'S ASSOCIATION. Annual convention, West Palm Beach. Secretary, F. C. Pfaender, Box 344, Chattahoochee, Fla.

May, 1940—NATIONAL FIRE PROTECTION ASSOCIATION. Annual convention, Atlantic City, N. J. Secretary, Hovey T. Freeman, Providence, R. I.

May 8-10, 1940—GEORGIA STATE FIRE COLLEGE. Annual fire college, Atlanta. Director, Harry Phillips, 166 Alabama St., S. W., Atlanta, Ga.

May 14, 1940—WEST TEXAS FIREMEN'S AND FIRE MARSHALS' ASSOCIATION. Meets at Munday, Tex. Secretary, E. C. Pruitt, Olney, Tex.

May 20-22, 1940—NEW YORK STATE FIRE CHIEFS' ASSOCIATION. Annual meeting, Poughkeepsie, N. Y. Secretary, Chief Chris W. Noll, Poughkeepsie, N. Y.

May 21-24, 1940—IOWA FIRE SCHOOL. 16th Annual Fire School, Iowa State College, Ames, Ia. Director of College, Prof. Lindon J. Murphy, University.

*May 23, 1940—IOWA FIRE CHIEFS' ASSOCIATION. Annual convention, Ames, Ia. Secretary, L. R. Morris, Ames, Ia.

May 25, 1940—IOWA FIRE CHIEFS' ASSOCIATION. 12th Annual Meeting, Ames, Ia. Secretary-Treasurer, Chief L. R. Morris, Ames.

June 10-12, 1940—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. Meeting at Virginia, Minn. Secretary, Fred Pfaender, New Ulm, Minn.

*June 11, 1940—STATE FIREMEN'S AND FIRE MARSHALS' ASSOCIATION OF TEXAS. Annual convention, Houston, Tex. Secretary, Olin Culberson, Edna, Tex.

June 11-14, 1940—ILLINOIS FIRE COLLEGE. 16th annual fire college, Illinois Firemen's Association, University of Illinois, Champaign-Urbana, Ill. Prof. L. H. Provine, Director of School. Roy W. Alsip, Champaign-Urbana, Secretary.

*June 19, 1940—NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. Annual convention, Bryan, Ohio. Secretary, J. W. Gardner, Ashland.

June, 1940—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual convention, Darlington, S. C. Secretary, Paul E. Welburn, Union, S. C.

*July, 1940—FIRE CHIEFS OF MAINE. Quarterly meeting at Camden, Me. Secretary-Treasurer, Charles W. Bowker, South, Paris, Me.

July 15-17, 1940—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. Annual meeting. Sturgenbay. Secretary, A. U. Simon, Lady Smith, Wis.

July 16-17, 1940—MARITIME FIRE CHIEFS' ASSOCIATION. Annual convention, Campbellton, N. B. Secretary, Charles A. Cunningham, St. John, N. B.

July, 1940—WASHINGTON STATE FIREMEN'S ASSOCIATION. Annual convention, Post Angeles, Wash. Secretary, Hugh M. Leslie, Auburn, Wash.

*Aug. 1940—WEST VIRGINIA FIREMEN'S ASSOCIATION. Annual convention, New Martinsville, W. Va. Secretary, H. G. Fridinger, Martinsburg, W. Va.

*Aug. 1940—UTAH STATE FIREMEN'S ASSOCIATION. Annual convention, Logan, Utah. Secretary, John J. Creedon, Bingham Canyon, Utah.

Aug., 1940—CONNECTICUT STATE FIREMEN'S ASSOCIATION. Annual convention, Danbury, Conn. Secretary, D. W. Harford, South Norwalk, Conn.

Aug. 5-6, 1940—NEW YORK STATE FIRE FIGHTERS' ASSOCIATION. Annual convention, Schenectady, N. Y. Secretary, Frank A. Emden, 1403 Mather Ave., Utica, N. Y.

Aug. 4-5, 1940—OHIO STATE VOLUNTEER FIREMEN'S ASSOCIATION. 2nd Annual Convention, Sandy Beach, Akron, Ohio. Secretary, Chief Sid Wellock, Coventry Township.

*Aug. 12-17, 1940—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual meeting, Salisbury, N. C. Secretary, John L. Miller, Concord, N. C.

*Aug. 12-17, 1940—VIRGINIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Bristol, Va. Secretary, R. B. Barker, Newport News, Va.

Aug. 16-19, 1940—FIREMEN'S ASSOCIATION, STATE OF NEW YORK. Annual convention, Dunkirk, N. Y. Secretary, Fred A. Davis, 140 Broadway, Fort Edwards, N. Y.

Sept., 1940—NEW JERSEY STATE FIREMEN'S ASSOCIATION. Annual convention, Atlantic City, N. J. Secretary, Evan F. Benners, 24 Branford Pl., Newark, N. J.

*Sept., 1940—LOUISIANA STATE FIREMEN'S ASSOCIATION. Meeting at Thibodaux. Secretatry, Edward Wright, Hocima, La.

*Sept. 3-6, 1940—MARYLAND SHORT COURSE FOR VOLUNTEER FIREMEN. Annual school at the University of Maryland, College Park, Md. Director, Chief J. W. Just, College Park, Md.

Sept. 3-5, 1940—KENTUCKY FIREMEN'S ASSOCIATION. Meeting at Bowling Green. Secretary, V. A. Beam, 2221 W. Broadway, Louisville, Ky.

Sept. 16-17, 1940—TEMISKAMING FIREMEN'S ASSOCIATION. Annual convention, New Liskeard, Ont. Secretary, F. E. Thompson, New Liskeard, Ont.

*Sept. 17-18, 1940—IOWA FIREMEN'S ASSOCIATION. Meeting at Emmetsburg, Ia. Secretary, Paul A. Soener, Independence, Ia.

*Sept. 23-26, 1940—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual meeting, San Jose, Cal. Secretary-Treasurer, Harry E. Strasser, 2046 Oregon Ave., Long Beach, Cal.

*Oct. 1940—FIRE CHIEFS OF MAINE. Quarterly meeting at York Harbor, Me. Secretary-Treasurer, Charles W. Bowker, South Paris, Me.

*Oct., 1940—ARKANSAS STATE FIREMEN'S ASSOCIATION. Meeting at Russellville. Secretary, H. D. Compton, Little Rock, Ark.

*Oct. 1, 1940—FIREMEN'S ASSOCIATION, STATE OF PENNSYLVANIA. Annual meeting, Lewistown, Pa. Secretary, Charles E. Clark, Wayne, Pa.

*Oct. 4, 1940—WALWORTH COUNTY FIRE OFFICERS' ASSOCIATION. Annual meeting, East Troy, Wis. Secretary, C. A. Foster, Lake Geneva, Wis.

*Oct. 15-17, 1940—ILLINOIS FIREMEN'S ASSOCIATION. Annual meeting, Murphysboro, Ill. Secretary, Roy W. Alsip, Champion, Ill.

Oct. 15-17, 1940—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Omaha, Neb. Secretary, Louis A. Novak, Norfolk, Neb.

*The notices marked with an asterisk are either appearing for the first time or have been changed since the preceding issue.

Fairfield County Plan Meet

(*Continued from page 580*)

that by calling in neighboring companies and going right to work—and by the men taking punishment, many times total loss can be prevented. Retired Chief Beckerle and Retired Chief Gisborne also discussed instances where two or three booster lines have extinguished fires, which, without them, would have leveled buildings. They pointed out, however, that the men must be prepared to "take it" as every drop of water must be utilized to the best advantage and not a drop wasted. Using the booster line required getting right on top of the blaze.

John F. Clancy, Thomas F. Magner and Philip Thompson, all Captains in the Bridgeport Fire Department, were elected to membership.

Chief Carrigan discussed the Drivers Liability Bill and said that if the bill as passed does not cover all drivers, that the individual companies and county plans should discuss ways and means of improving the bill and give any information to the Legislative Committee of the Firemen's Association.

The next meeting of the Plan will be at Nichols on Wednesday evening, December 27. There will be no January meeting. The February meeting will be at Glenbrook, Conn., on February 28.

JOHN MOEHRING.

Department and Other Reports Received

Brockton, Mass.—Annual report of the Fire Department, Brockton, Mass.; ninety-six pages.

Singapore, Malay Straits Settlement—Annual report of the Fire Department; four pages.

Los Angeles, Cal.—Fifty-second annual report of the Fire Department, Los Angeles; 47 pages and many illustrations.

Philadelphia, Pa.—Sixty-ninth annual report of the Fire Insurance Patrol, Philadelphia, Pa.; 29 pages.

Springfield, Ohio—Annual report of the Fire Department, Springfield, Ohio; 11 typewritten pages.

Knoxville, Tenn.—Annual report of the Fire Department of Knoxville, Tenn.; nine typewritten pages.

Everett, Wash.—Sixteenth annual report of the Fire Department, Everett, Wash.; 56 typewritten pages.

Beverly Hills, Cal.—Annual report of the Fire Department, Beverly Hills, Cal.; mimeographed report.

Indianapolis, Ind.—Annual report of the Bureau of Fire Prevention, Indianapolis, Ind.; mimeographed report.

Lansing, Mich.—Annual operating report of the Fire Department, Lansing, Mich., including a report of the fire alarm system.

Minneapolis, Minn.—Annual report of the Fire Department, Minneapolis, Minn.; 42 typewritten pages.

Fort Collins, Col.—Annual report of the Fire Department, Fort Collins, Col.; 16 pages, illustrated.

Wellington, New Zealand—Twelfth annual report of the Wellington Fire Board for 1937 and 1938; 12 pages.

Brighton, Col.—Report of the eighth annual fire college and the 22nd annual convention and tournament of the Colorado State Firemen's Association held at Brighton, Col.

Belmont, Mass.—Annual report of the Fire Department, Belmont, Mass.; 11 pages.

Fitchburg, Mass.—Annual report of the Fire Department, Fitchburg, Mass.; 16 pages.

Omaha, Neb.—Annual report of the Fire Department, Omaha, Neb., complete with photographs and views and data regarding the city; 100 pages and many illustrations.

FALSE ALARMS

"One thing about this Santy Claws bizness. You sure get your share of stuffing."

TRUE TO FACT

He was an old smoke eater who had retired as Captain from the department several years ago. But he still retained an interest in the service, and whenever he was in the vicinity of his old station, he managed to find time to stop for a chat.

On one of these visits he learned that an old buddy had passed away. To prevent a similar incident, he rushed to his doctor for a physical checkup.

After the examination the doctor said: "You're in good shape. You should reach eighty."

"I'm eighty-one, doctor."

"Fine," said the doctor. "What did I tell you."

Christmas comes but once a year—
Once is quite aplenty.
We'd be daffy did it appear
Fifteen times or twenty,
Thinking up that many ways
To wish you Merry Christmas days.

THE FALL WAS FATAL

A couple of the officers of neighboring towns were discussing what their respective communities were doing for the poor children at the holiday season.

Asked one, "Do you believe that most of the youngsters that you have up at the engine house before Christmas really believe in Santa Claus?"

"Well, to be honest, I believe that they did until last Christmas. At that time, it was my time to play Santa Claus. Just as I came down stairs from the dormitory, with my big bag full of toys, some smart kid down stairs turned off the lights.

"I kind of landed on the bottom of the stairs sooner than I expected, and the children realized that Santa Claus never used the words that I did."

CHANGED APPEARANCE

The influence of fire prevention had even reached the sanctum of English 72, a course for freshmen at the university. One student wrote in his paper:

"When we go camping, we must keep the place neat; we must be very careful to put out our fire. This is God's country. Don't burn it up and make it look like hell."

Radio broadcasting stations are on top of buildings so that it is impossible to throw bricks at the performers.

QUICK SETTLEMENT

We have this one on authority from a well known apparatus salesman.

He was out playing golf with a prospect, when a shot hit some burly player who was over the hill, beyond the green. The one hit waited until the other came in view.

He shouted, "That ought to cost you five bucks for damages."

"But I yelled fore."

Said the other, "All right then, four. I won't argue for a lousy buck."

Football is a game in which the best team loses on account of the other fellows getting some of the darndest breaks.

OUT OF CIRCULATION

The newshawk from the *Clarion*, who made his nightly rounds at fire headquarters, blustered in one evening, rushed up to the desk man and asked:

"Do you have two bucks that want to be like Greta Garbo?"

"I don't get you."

"Well, have you got two bucks that vants to be a loan?"

"He's checking on fires until we get the alarm fixed."

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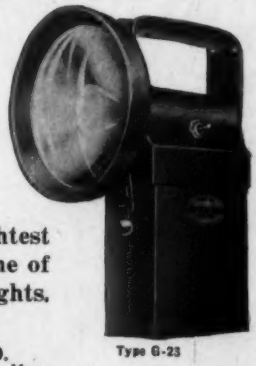

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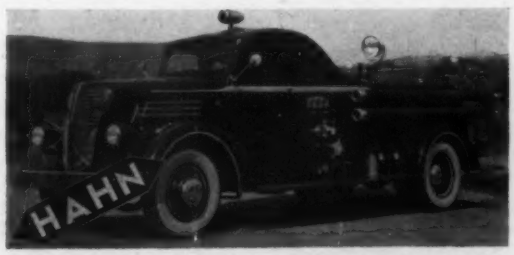

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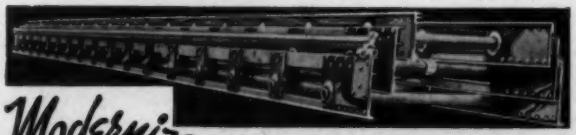

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KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PA.

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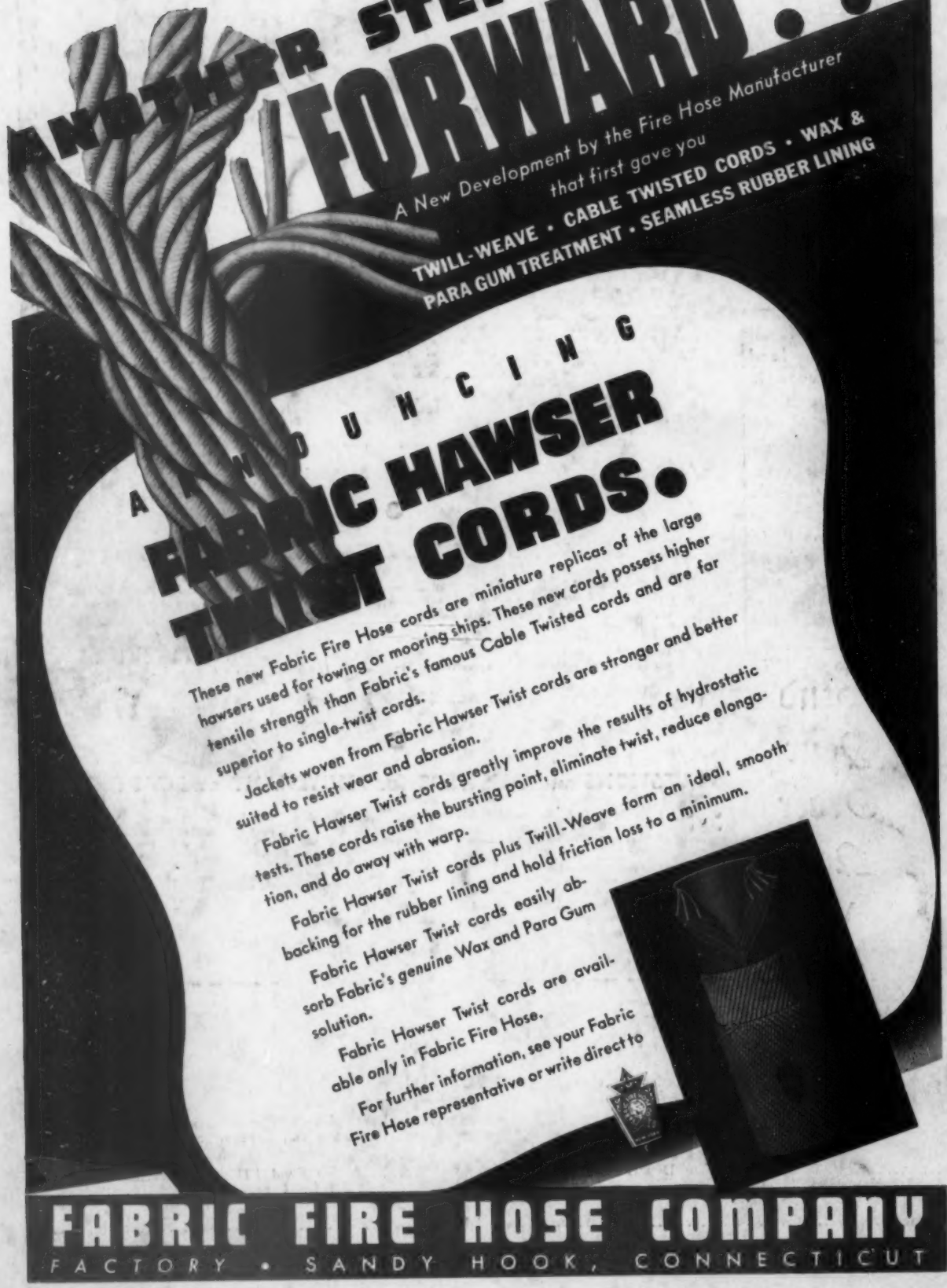

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